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For the degree of Doctor of Philosophy

Is approved by the final examining committee:

Sugato Chakravarty
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Approved by Major Professor(s): Sugato Chakravarty

Approved by: Thomas J. Templin November 18, 2014
Head of the Graduate Program Date

ESSAYS ON CORPORATE BANK LOAN CONTRACTING

A Dissertation

Submitted to the Faculty

of

Purdue University

by

Leann G. Pashnyak

In Partial Fulfillment of the

Requirements for the Degree

of

Doctor of Philosophy

December 2014

Purdue University

West Lafayette, Indiana

To my parents, George and Nina Pashnyak

To my husband, Brian Rutherford

To my children, Tommy and Natalie

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ABSTRACT

Pashnyak, Leann G., Ph.D., Purdue University, December, 2014. Essays on Corporate Bank Loan Contracting. Major Professor: Sugato Chakravarty.

This dissertation is comprised of two essays on corporate bank loan contracting. The purpose of the first essay is to investigate the effect of loan's designated purpose on loan agreement contracting terms, as well as to examine whether lenders apply different standards to assess the value of borrower's corporate governance for each type of loan purpose. Using a large sample of private bank loans, the results indicate that both price and non-price loan terms vary significantly by loan purpose. Specifically, the spread yield varies by about 182 basis points (bps) for loans made for different purposes. Further, borrowers of operations loans (commercial paper backup, general corporate purpose, and working capital) are able to reduce their commitment fees by as much as 30%. In addition, restructure loans (acquisition line, debt repayment, leveraged buyout, spinoff, and takeover) are more sensitive to covenant inclusion than operations loans by as much as 39%. Inclusion of sweep restriction covenants significantly reduces spread yield for restructure loans, while financial ratio restrictions reduce spread yield for operations loans. Finally, empirical findings suggest that corporate governance for operations loans is significantly more influential at affecting both price and non-price terms of loan contracts than for restructure loans.

The second essay utilizes a hostile takeover framework to examine the effect of board busyness on corporate cost of debt. First, the study establishes an inverse relationship between board busyness and firm's hostile takeover vulnerability by implementing the takeover vulnerability index, which allows for study of the relationship *ex ante*. Second, the relationship between board busyness and cost of debt is investigated. The results indicate that as the level of board busyness increases, the cost of debt decreases. Economically, the findings suggest that for firms whose board is comprised of 40% busy directors, the spread yield is about 27 bps lower than for firms without busy directors.

ESSAY 1: DOES THE PURPOSE OF A LOAN MATTER?

EVIDENCE FROM BANK LOAN CONTRACTING

The objective of this study is to examine the relationship between loan's designated purpose and loan contract agreement composition, as well as to determine the differential impact of corporate governance on the cost of debt for loans of different purposes. Using a sample of 4,333private bank loans, we find that both price and non-price loan terms vary significantly by loan purpose. Specifically, our results indicate that spread yield varies by as much as 182 bps among loans with different purpose designations. We also observe that borrowers of operations loans (i.e., CP backup, general purposes, and working capital) are able to reduce their upfront commitment fees by as much as 30%. Restructure loans (i.e., acquisition line, debt repayment, LBO, spinoff, and takeover) are more sensitive to covenant inclusion than operations loans by as much as 39%, especially for capital raising restrictions. Further, we determine that inclusion of covenants significantly reduces the spread yield, although not uniformly across loans of different purposes. In addition, our results suggest that quality of corporate governance for operations loans borrowers is significantly more influential at reducing both price and non-price terms of loan contracting than for borrowers of restructure loans.

1. Introduction

Private debt financing comprises a large portion of corporate capital makeup.[1] As a result of the heavy corporate reliance on private debt capital, a great deal of research has been devoted to studying how bank loan contracts are determined, including how factors such as borrowers' corporate governance characteristics affect the cost of debt.[2] However, much of the extant literature on bank loan contracting applies its findings indiscriminately to loans of all purposes without regard to idiosyncrasies in loan structure and design resulting from different designated uses of loan proceeds.[3] To help fill the void, we examine the relationship between loan's designated purpose and loan contract agreement composition, as well as determine the differential impact of corporate governance on the cost of debt for loans of different purposes.

Loan contracts are comprised of both price (i.e., spread, fees) and non-price (i.e., covenants) terms, where each component is designed to serve specific function within the loan agreement.[4] Several studies suggest that loans with particular designated purposes, such as recapitalizations, buyouts, and spinoffs (collectively referred to as restructure loans), have significantly higher spreads than operational loans, such as general corporate

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[1]For example, in 2006, U.S. domiciled corporations raised more than $2,619 billion of new external capital, of which 65% consisted of private bank loans. The data supporting these statistics come from Federal Reserve Bank (www.federalreserve.gov/econresdata/releases /corpsecure/) and the Loan Pricing Corporation.

[2]See, for example, Asquith, Beatty, and Weber (2005); Bharath, Dahiya, Saunders, and Srinivasan (2011); Demiroglu and James (2010); Dennis, Nandy, and Sharpe (2000); Gorton and Kahn (2000); Kim, Song, and Zhang (2011); Qian and Strahan (2007).

[3] For example, although studies such as Demiroglu and James (2010), Dichev and Skinner (2002), and Graham, Li, and Qiu (2008), significantly extend the general understanding on the various components of loan contracting, they do not examine whether contract terms are determined differently for loans extended for projects such as LBO or takeover (which undergo significant changes in capital structure) than projects for corporate purposes or working capital.

[4] Specifically, the role of price terms in loan agreement is to compensate lenders for undertaking the risk of loan default (e.g., Bhojraj & Sengupta, 2003); the role of non-price terms is to serve a monitoring function designed to curb borrowers' tendency to engage in risky investment projects and risk-shifting activities (e.g., Chava & Roberts, 2008; Nini, Smith, & Sufi, 2009; Rajan & Winton, 1995).

expenditures (Angbazo, Mei, & Saunders, 1998; Hubbard, Kuttner, & Palia, 2002; Saunders & Steffen, 2011). Yet, there exists limited knowledge regarding the relationship between loan proceeds use and the composition of the non-price components of loan contracts. For example, it is unclear whether certain covenants are more prone to appear in loans designated for one specific purpose relative to another. In addition, although extant research suggests that some covenants have a reducing effect on the loan's yield spread[5], thus far it is unknown if that relationship holds for bank loans of all purposes or if they are differentiated along specific purposes. Therefore, to draw accurate inferences on whether covenants have the same price-reducing effect on loans extended for different purposes, both price and non-price aspects of loan agreements need to be examined.

In a different but related stream of research, the relationship between corporate governance mechanisms and the cost of debt is well established. Extant literature argues that firms with large, independent, experienced, and diverse boards of directors, as well as low institutional ownership and strong anti-takeover governance provisions are able to borrow capital more cheaply.[6] While many research studies that examine the impact of firms' corporate governance structure on price and non-price aspects of cost of debt include fixed effects to control for loan purpose, they generally imply the relationship affects loans of all purposes uniformly.[7] However, given that loans formed for different uses are likely to present different monitoring concerns, as well as challenges, to lenders,

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[5] According to Reisel (2014) and Wei (2005), covenants restricting issuance of additional capital, as well as curbing investment activities, significantly reduce bond spreads.

[6] See, for example, Anderson, Mansi, and Reeb (2004), Bradley and Chen (2011), Chen (2012), Cremers, Nair, and Wei (2007), Fields, Fraser, and Subrahmanyam (2012), Francis, Hasan, Koetter, and Wu (2012), and Klock, Mansi, and Maxwell (2005).

[7] See, for example, Chava, Livdan, and Purnanandam (2009); Ferreira and Matos (2012); Francis et al. (2012); Graham et al. (2008); Wittenberg-Moerman, 2008.

banks may evaluate what constitutes quality corporate governance components differently for each type of loan purpose.[8]

Given the existing gaps in the literature discussed above, the purpose of this study is to address the following research questions: (1) How does the composition of price and non-price loan contracting terms change for loans of different proceed designations? (2) How do loan purpose designations affect bank lenders' preferences in borrowers' corporate governance characteristics when determining spread yield, upfront fees, and covenant restrictions in new loan contracts?

Using a sample of 4,333 commercial loans from the DealScan database for the period between 1998 and 2006, we test the effect of loans' designated purpose on loan contracting terms, and whether lenders use different standards to assess the quality of borrowers' corporate governance for each type of loan purpose. Although several previous studies attribute the significant difference in loan contracting terms to credit risk differential,[9] several other studies argue that the variance in debt price is not always strictly risk-driven.[10] Therefore, to reduce the effect of credit risk in our analyses, we control for loan and firm-related risk factors. As a result, we conclude that our findings

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[8] For example, lenders extending credit for LBO purposes may place more value on advisory and expertise presence within the internal corporate governance structure that will help guide the firm as it undergoes significant changes in its capital structure than on close monitoring of managerial expenditures (e.g., Cumming, Siegel, & Wright, 2007). With that said, loans made for general corporate purposes may benefit better from more protection in a form of board independence from managerial misappropriation of funds and/or asset substitution, but have little need for directors with extensive recapitalization experience (e.g., Armstrong, Guay, & Weber, 2010; Richardson, 2006).

[9] For example, Cumming et al. (2007) and Denis and Denis (1995) suggest that borrowers of restructure loans have a higher probability of default on their debt obligations than borrowers of non-restructure loans.

[10] Angbazo et al. (1998), James (1987), and Lummer and McConnell (1989), state that the purpose of the loan has useful information content beyond the signals about credit-worthiness that are conveyed in loan origination announcements. Specifically, Megginson, Poulsen, and Sinkey (1995) determine that lenders are also able to charge higher rates for providing immediacy to finance loans such as asset acquisition, buyouts, and takeovers.

reflect the idiosyncrasies in contract structure based on different loan purposes, not just simple variations in credit risk.

We find that loans designated to finance asset acquisition lines, debt repayment, LBO, spinoff, and takeover purposes incur significantly higher spread yields than loans designated for commercial paper (CP) backup and working capital purposes. We observe that the differential in spread between restructure[11] purpose loans and operations[12] purpose loans is much higher than previously suggested in the literature, even in studies that also report higher spread for loans extended for purposes such as recapitalization, acquisition, LBO, and takeover, than loans made for other more general purposes (e.g., Gopalan, Nanda, & Yerramilli, 2011; Hubbard et al., 2002). Specifically, our results indicate that by failing to account for loan purpose, extant research may be understating the spread yield by as much as 122% (150 bps) for loans with spinoff designations and overstating the spread by as much as 26% (32 bps) for loans with CP backup purposes.

Consistent with Berg, Saunders, & Steffen (2013) and Graham et al. (2008), we find that upfront commitment fees vary by as much as 30%. However, we observe that although the reduction in upfront commitment fees is significant for borrowers of operations loans, loans made for restructure purposes do not exhibit a significant relationship with loan fees. These findings concur with extant research suggesting that operations loan borrowers are often able to negotiate larger upfront fee discounts than borrowers of loans designated for restructure purposes as a result of more extensive prior relationships with the lender (Bharath et al., 2011; Ivashina, 2009; Yasuda, 2005).

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[11]Restructure projects are comprised of asset acquisition line, debt repayment, LBO, spinoff, and takeover (Ivashina & Scharfstein, 2010).

[12]Operations projects are comprised of commercial paper backup, general corporate purposes, and working capital (Ivashina & Scharfstein, 2010).

As implied by Gopalan et al. (2011), we find that overall, loan covenants are more prevalent among restructure purpose loans. For example, an average restructure purpose loan contains an additional covenant requirement, as compared to operations purpose loans. In addition, consistent with the notion that higher levels of information asymmetry exist between borrowers and lenders of loans for restructure projects,[13] which require more monitoring, we find that propensity of covenant inclusion is much more sensitive to restructure loans than operations loans. This is especially true for collateral requirement and capital raising restrictions, as supported by Nini et al. (2009).

Both theoretical and empirical research suggests that debt covenants have an inverse relationship with spread yield.[14] Accordingly, we observe that while a reduction in the loan spread is similar for both restructure and operations purpose loans in the case of security requirement and dividend issuance restrictions, it differs substantially for financial ratios and the capital-raising sweep covenants. For instance, we find that including more than two financial ratio covenants in loan agreements does not significantly affect the spread in restructure loans, but reduces spread yield by 12% in operation purpose loans. On the contrary, inclusion of the asset sales sweep restriction reduces spread yield by 25% in restructure purpose loans, as compared to only a 13% reduction effect on operations purpose loan spread. Therefore, our results suggest that the impact of covenants on spread yield differs by loan purpose.

[13] For example, according to Cumming et al. (2007), LBO loans present lenders with a number of agency problems that are addressed through higher levels of direct and indirect monitoring of the borrowing firm. In addition, Peyer and Shivdasani (2001) suggest that following recapitalization, firm executives are excessively focused on short-term cash generation, and thus more likely to engage in overly risky investments.

[14] Specifically, Bradley and Roberts (2004), Jensen and Meckling (1976), and Myers (1977) develop the Agency Theory of Covenants, which explains the underlying reasons for the presence of covenants in debt agreements. Reisel (2014) and Wei (2005) find that covenants restricting the issuance of higher priority claims and investment activities have a lowering effect on bond yields.

Finally, our results indicate that the corporate governance characteristics of restructure loan borrowers tend to have less influence on a loan's contracting terms than those of operations loan borrowers. Most notably, we observe that while board independence, expert directors, female directors, and directors' voting power have a significant impact on debt costs for operations loans, these corporate governance attributes do not significantly affect loans for restructure purposes. Thus, we conclude that consistent with extant literature, lenders extending loans for restructure purposes do not heavily rely on firms' existing corporate governance for monitoring needs mainly because they are aware that the high probability of technical default on the loan will allow them to exert their own influence on the firm's governance mechanisms.[15] Creditors' reliance on borrowers' existing corporate governance structure for operations purpose loans is also supported by extensive literature stating that quality board of directors and low shareholder control have a reducing effect on firm's cost of debt.[16]

The remainder of this paper is organized as follows. Section 2 will discuss background literature and state testable hypotheses. Section 3 will describe the sample, explain variable measures, and present summary statistics. Section 4 will provide results for the multivariate analyses. Section 5 will offer robustness checks and data sensitivity tests. Section 6 will summarize and present our concluding remarks.

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[15]Baird and Rasmussen (2006), Chava and Roberts (2008), and Roberts and Sufi (2009a), among others, assert that creditors gain significant power over borrowing firm's corporate governance when at least one loan covenant is violated. According to Roberts and Sufi (2009b), covenant violations are most prevalent among firms that are smaller and those with lower credit rating, as similar to our sample of loans designated for restructure purposes.

[16] See, for example, Anderson et al. (2004),Ashbaugh-Skaife, Collins, and LaFond (2006), Bhojraj and Sengupta (2003), Fields et al. (2012).

2. Background Literature

2.1. Loan Purpose

The seminal agency theory helps explain that one of the main reasons firms seek debt capital over equity is to reduce conflict between firm's equity holders and its management (Harris & Raviv, 1991; Jensen & Meckling, 1976). However, the underlying reasons for why firms require the additional capital lie in specific needs of the borrowing firms. For example, a company in need of funds to finance day-to-day operations is likely to apply for a working capital loan, while a firm desiring to refinance existing debt may inquire about a debt repayment loan. Firms borrow additional capital to fund numerous different projects; however, the seven common primary loan designations are asset acquisition line, debt restructuring, leveraged-buyout (LBO), takeover, general corporate purpose, commercial paper (CP) backup, and working capital (e.g., Angbazo et al., 1998; Strahan, 1999). Further, although each loan purpose category is unique in how it is perceived by lenders, they are often classified as either "restructure" or "operations" loans. Specifically, restructure loans are those that increase a firm's leverage, change ownership, or require other changes that are not essential to day-to-day operations, such as asset acquisition, debt repayment, LBO, spinoff, stock buyback, and takeover (Eckbo & Thorburn, 2008; Francois & Missonier-Piera, 2007; Gupta, Singh, & Zebedee, 2008; Ivashina & Scharfstein, 2010). Operations loans, also referred to as non-restructure, real-investment, or general purpose, are used to facilitate predictable investments in physical or working capital (Ivashina & Scharfstein, 2010; Hubbard et al.,

2002). Operations loans typically include loans designated for finance projects such as general corporate purposes, commercial paper backup, and working capital.

Extant literature tends to regard loans within the restructure category as riskier by lenders than operations loans, since restructure loans indicate a substantial change in a borrower's capital structure (e.g., Carey, Post, & Sharpe, 1998; Harjoto, Mullineaux, & Yi, 2006; Wittenberg-Moerman, 2008). For instance, Denis and Denis (1995) report that 31% of LBO firms in their sample encountered financial distress. However, according to Angbazo et al. (1998), James (1987), and Lummer and McConnell (1989), the purpose of the loan offers useful information beyond borrowers' credit-worthiness. As an example, loan purpose conveys insight about borrowers' need for immediacy, as in asset acquisition, buyout, and takeover loans (e.g., Megginson et al., 1995); investments in negative NPV, as in debt refinancing and recapitalization loans (Angbazo et al., 1998; Denis, 1990); and provision of liquidity, as in CP backup loans (Gatev & Strahan, 2006). Therefore, we expect to gain further understanding beyond the risk structure, discerning the idiosyncratic nature of loans made for various specific purposes.

2.2. Price Components of Loan Contracting

According to the traditional banking theory, credit risk is one of the main determinants of loan pricing (e.g., Freixas and Rochet, 1997). For example, several prior studies cite risk as the reason that loans within the restructure purposes category have significantly higher spread yields than loans within the non-restructure purposes category (e.g., Gopalan et al., 2011; Harjoto et al., 2006; Hubbard et al., 2002; Saunders & Steffen, 2011). However, extant research does not examine the relationship between loan spread

and loan purpose in detail, both as individual specific purposes and a group. Further, credit risk is not the sole factor influencing loan spread yields. Loan pricing is also strongly affected by firms' demands for immediacy (e.g, Megginson et al., 1995), securitization (e.g., Benmelech & Bergman, 2009; Booth & Booth, 2009; John, Lynch, & Puri, 2003), quality of corporate governance (e.g., Anderson et al., 2004; Cremers et al., 2007; Fields et al., 2012), as well as the number and tightness of restrictive covenants (Bradley & Roberts, 2004; Matvos, 2013; Murfin, 2012; Reisel, 2014). According to Shleifer and Vishny (1997) and Lehn and Poulsen (1989), buyout firms possess low corporate control, while Peyer and Shivdasani (2001) suggest that recapitalized firms tend to struggle with immediate cash flow. In addition, Cumming et al. (2007) suggest that LBO firms require costly intense monitoring. Given that firms seeking loans within the restructure classification are more likely to need immediate funding, possess lower quality corporate governance attributes, and require more oversight, we expect that restructure loan contracts will have higher spread than operations loan contracts. Thus, we form our first testable hypothesis:

> *Hypothesis 1: Loans designated to fund restructure projects (i.e., asset acquisition line, debt repayment, LBO, spinoff, and takeover) will incur higher spread than loans designated to fund operations projects (i.e., general corporate purposes, CP backup, and working capital).*

Berg et al. (2013) find that loan fees significantly contribute to the increase in loan price, by as much as 38%. Similar to loan spread yields, Graham et al. (2008) and Ivashina (2009), among others, find that transaction fees on commercial loans tend to increase with the complexity and riskiness of the loan. However, unlike loan spreads,

loan fees do not directly compensate lenders for undertaking higher levels of credit risk. Instead, according to Angbazo et al. (1998), loan fees are used to complement loan spreads for syndication, commitment, and cancellation risks. Lower fees are also associated with larger loans, primarily because fees are measured as the percentage of loan amount and larger loans have the benefit of economies of scale (e.g., Berg et al., 2013). Further, Yasuda (2005) finds that relationship banking significantly reduces loan fees, primarily as a result of lower levels of information asymmetry. In addition, Bharath et al. (2011) suggest that borrowers of restructure purpose loans, such as LBOs, typically are less likely to have established relationships with their lenders than borrowers of operations loans, such as CP backup. Specifically, they find that over 88% of firms seeking CP backup loans have an established relationship with the leading lender, compared to only 47% of borrowers applying for LBO loans. Since restructure loans tend to be more complex to administer than operations loans, and restructure firms are less likely to have a prior relationship with the lender, we predict that restructure loans will bear higher fees than operations loans.

> *Hypothesis 2: Loans designated to fund restructure projects (i.e., asset acquisition line, debt repayment, LBO, spinoff, and takeover) will incur higher loan fees than loans designated to fund operations projects (i.e., general corporate purposes, CP backup, and working capital).*

2.3. Loan Covenants

To reduce credit risk, as well as mitigate the risk of asset misappropriation, lenders typically include non-price monitoring provisions in their loan agreements in the form of loan covenants that are designed to curb the firm's ability to engage in risky

investment projects and risk-shifting activities. Covenants are a powerful component of loan contracting because violation of even one covenant results in a technical default of a loan, allowing lenders to impose additional interventions, not just regarding repayment or renegotiation of the loan, but even gaining corporate control.[17] Firms that are perceived as riskier due to informational opacity generally have loan covenants that are more intense and restrictive (e.g., Bradley & Roberts, 2004; Demiroglu & James, 2010; Dichev & Skinner, 2002). According to Gupta et al. (2008) and Wittenberg-Moerman (2008), borrowers of restructure loans are more likely to suffer from information opacity due to the uncertainty in outcome of the substantial changes in a borrower's capital structure, than borrowers of operations loans. Further, Citron, Robbie, and Wright (1997) find that loans made to finance buyouts contain more covenants, while Gopalan et al. (2011) report that working capital loans have significantly less intense and restrictive covenants than takeover and repayment loans. Therefore, we predict that restructure loan contracting terms will contain more covenant restrictions.

> *Hypothesis 3: Loans designated to fund restructure projects (i.e., asset acquisition line, debt repayment, LBO, spinoff, and takeover) will contain more covenants than loans designated to fund operations projects (i.e., general corporate purposes, CP backup, and working capital).*

2.4. Loan Spread vs. Loan Covenants

Some prior research finds that price and non-price components of loan contracting act as complements for one another (e.g., Strahan, 1999; Rajan & Winton, 1995). They claim that riskier borrowers pay higher price premiums and incur more and tighter

[17] According to Baird and Rasmussen (2006, p. 1211), "when a business trips one of the wires in a large loan, the lender is able to exercise de facto control rights – such as replacing the CEO of a company – that shareholders of a public company simply do not have."

non-price restrictions. However, such argument contradicts the Agency Theory of Covenants, which attempts to explain the underlying reason for the presence of covenants in debt contracts (e.g., Bradley & Roberts, 2004; Jensen & Mecklin, 1976; Myers, 1977; Smith & Warner, 1979). The theory suggests that in order to reduce the agency conflict (and the associated agency costs) between shareholders and bondholders, covenants are used to restrict the behavior of managers and thus, better align their interests to those of bondholders. Therefore, the theory implies that shareholders are able to benefit from the inclusion of bondholders' covenant restrictions.

More recent empirical research studies, such as Bradley and Roberts (2004) and Demiroglu and James (2010) find that loan contracting terms are determined simultaneously, where borrowers are often given the option to choose from predetermined loan packages featuring different levels of spread yields, fees, and intensity and restrictiveness of covenants. Assuming that the firm is provided with a choice, reason states that a rational borrower will only choose a loan contract with more intense and/or restrictive covenants if price terms of the loan are sufficiently reduced to the level where benefits from inclusion of covenants outweigh the associated costs. Further, the notion that loan covenants have a reducing effect on loan price is in accord with findings in private loans by Matvos (2013) and in public debt by Reisel (2014) and Wei (2005). Specifically, using a novel statistical approach, they find that covenants restricting the issuance of higher priority claims and investment activities have an inverse relationship with bond yields, especially in the case of high growth firms and firms with low probability of default. Given that restructure loans tend to incur higher spread than operations loans, borrowers of restructure loans have stronger incentive to signal to

lenders that they are not risky, but creditworthy borrowers, by accepting additional covenant restrictions in order to reduce the spread amount (e.g., Beatty, Ramash, & Weber, 2002; Gopalan et al., 2011; Saunders & Steffen, 2011). Thus, we expect that loans made for restructure purposes will exhibit more sensitivity in their relationship between loan spread and loan covenants than loans made for operations purposes.

> *Hypothesis 4: Loans designated to fund restructure projects (i.e., asset acquisition line, debt repayment, LBO, spinoff, and takeover) will be more sensitive in their relationship between loan spread and loan covenants than loans designated to fund operations projects (i.e., general corporate purposes, CP backup, and working capital).*

2.5. Corporate Governance

One of the main ingredients of strong corporate governance recognized by lenders is an effective board of directors, which is charged with the task to provide advice and oversee management's behavior within the firm (Ge, Kim, & Song, 2012). However, the directors are elected by the shareholders of the firm and, therefore, their mission is first and foremost to protect and maximize the shareholders' investments, above other shareholders such as the firms' creditors. Nevertheless, extensive empirical evidence supports that lenders are also able to benefit from select board qualities. In particular, banks recognize the advantages of utilizing board monitoring in mitigating information risk *ex ante* and controlling agency risk *ex post* (e.g., Francis et al., 2012). Further, lenders reward firms with higher-quality boards of directors with more favorable loan contract terms. Specifically, extant research suggests that lenders are more willing to provide loans at a lower cost, as well as often with fewer and less intense covenants, to firms whose boards are large, diverse, more independent, have higher number of busy

and experienced directors, and lower directorship ownership (e.g., Anderson et al., 2004; Ashbaugh-Skaife et al., 2006; Bhojraj & Sengupta, 2003; Fields et al., 2012; Francis et al., 2012). In addition, favorable loan terms are extended to firms with low shareholder control, such as low institutional ownership and fewer anti-takeover governance provisions (e.g. Cremers et al., 2007; Ge et al., 2012; Klock et al., 2005).

The existing body of literature offers findings concerning the relationship between corporate governance and the costs of loan contracting with the general assumption that they apply to loans of any designated purpose. However, given that loans formed for different uses are likely to present lenders with diverse and unique concerns and challenges, banks may evaluate the composition of quality corporate governance components differently for each type of loan purpose. For example, Kaplan and Stromberg (2008) argue that the monitoring role of boards in public companies is undermined following restructure projects, such as buyouts, debt restructure, and takeovers, where the firm is acquired by private equity groups. Since, private equity firm partners often have a long experience in restructuring companies, the critical operations decisions are typically made by private equity sponsors, rather than the board of directors. In addition, although Cumming et al. (2007) find that lenders of LBO loans rely on the borrower's corporate governance for monitoring, Gilson (1990) clarifies that following debt restructure, lenders replace almost 55% of incumbent directors in order to gain more control over the firm. Further, Cornelli and Karakas (2008) show that during firm restructuring periods, expertise typically comes from external sources. Therefore, lenders extending credit for restructure projects are likely to prefer more direct involvement in monitoring the firm's decisions during the transition period rather than

outsource to borrower's existing board of directors. Conversely, lenders of the less risky operations loans are likely to be more willing to delegate monitoring duties to effective boards of directors, and thus place a much higher value on effective corporate governance attributes, such as board independence and high levels of expertise to help protect themselves from managerial misappropriation of funds and asset substitution (e.g., Armstrong et al., 2010; Richardson, 2006). Therefore, based on the arguments presented above, we expect that borrowers' corporate governance characteristics will have a stronger influence on contracting terms of operations loans than restructure loans.

> *Hypothesis 5: Loan contracting terms of loans designated for restructure purposes (i.e., asset acquisition line, debt repayment, LBO, spinoff, and takeover) will exhibit less sensitivity toward borrowing firm's corporate governance characteristics than loan contracting terms of loans designated for operations purposes (i.e., general corporate purposes, CP backup, and working capital).*

3. Data Description and Variables

3.1. Data Sources and Sample Selection Criteria

For our sample, we obtain the terms of bank loan agreements from DealScan, a database created and marketed by Loan Pricing Corporation (LPC). The database contains detailed loan information for U.S. and foreign commercial loans made to corporations and government entities during the period between January 1998 and December 2006. According to LPC, approximately half of the loan data are from SEC filings (13Ds, 14Ds, 13Es, 10Ks, 10Qs, 8Ks, and registration statements). The other half are obtained from contacts within the credit history and from borrowers, lenders, and the

credit industry at large. Non-SEC filing sources of data have become relatively important in the later years of DealScan.

For the purpose of the current study, we focus on dollar-denominated bank loans of non-financial U.S. firms that have financial information in Compustat for the fiscal year preceding the loan agreement, as well as the board of directors' characteristics data in the RiskMetrics database. As suggested by Demiroglu and James (2010), we exclude short-term loans because, for such types of loans, the loan renewal or rollover process serves as a substitute for covenants in controlling moral hazard. The resulting overall loan sample is comprised of 4,333 loans representing 2,756 firm-years for 923 unique borrowers.

We recognize that as with other research studying the impact of corporate governance composition, there may be some concern regarding potential simultaneity and/or endogeneity issues.[18] We attempt to minimize these concerns through careful construction of our sample.[19] Specifically, we lag our measurement of corporate governance variables by one year before we assess the association between governance variables and credit terms. As a result, our corporate governance measures are from the period between January 1997 and December 2005, while loan contracting details are from January 1998 to December 2006. A similar lagging technique is applied by Dittmar and Mahrt-Smith (2007) and Fields et al. (2012). Since firms' governance typically is slow to change, the potential for loan costs to affect these governance characteristics is

[18]Hermalin and Weisbach (2003, p.8) observe that empirical studies of corporate governance are complicated by the fact that "almost all variables of interest are endogenous."
[19] We will conduct additional procedures designed to mitigate and correct potential endogeneity issues in Section 5 of this study.

small; however, when firms are experiencing financial difficulties, changes within governance structure are implemented quicker (i.e., Gilson, 1990).

3.2. Measures of Loan Purpose

We determine the loan purpose for each facility based on the Specific Purpose category available within DealScan. Of the 28 purposes available, we narrow down to eight specific purposes with the highest frequency. Consequently, our study examines the following loan purposes: acquisition line, CP backup, corporate purposes, debt repayment, LBO, spinoff, takeover, and working capital. In addition, following the precedence set in several other studies, we further categorize these loan purposes into restructure and operations loans (i.e., Gupta et al., 2008; Hubbard et al., 2002; Ivashina & Schafstein, 2010). Specifically, restructure loans are composed of acquisition line, debt repayment, LBO, spinoff, and takeover; while operations loans are comprised of CP backup, corporate purposes, and working capital. We code restructure loans as 1 and operations loans as 0.

3.3. Measures of Bank Loan Characteristics

In accordance with previous research on loan contracting, we examine loan terms as both price and non-price components.[20] Price components consist of *spread* and *commitment fees*. S*pread* is the interest rate that the borrower pays on its loan. It is measured using the All-in-Spread-Drawn category within DealScan that represents the borrowing cost per each dollar of the loan drawn. *Spread* is calculated as a basis point

[20]See, for example, Bradley and Roberts (2004); Bharath et al. (2011); Chava et al. (2009); Demiroglu and James (2010); Fields et al. (2012); Francis et al. (2012); Ivashina (2009).

markup over the 6-month LIBOR, plus any recurring fees associated with the lending facility. *Commitment fees* are also referred to as upfront transaction fees that compensate the lead lender for underwriting, dispensing, and monitoring costs related to the undrawn funds of the loan. This variable is determined using the Commitment Fees category within DealScan, where it is reported in basis points.[21] For the purpose of utilizing *spread* and *commitment fees* in our multivariate analyses, both variables are transposed with natural log.

Non-price components of loan contracting are measured using the loan covenant intensity index, adapted from Bradley and Roberts (2004). The loan covenant intensity index, hereafter referred to as the *covenant index*, is an aggregate measure of covenant structure, comprised of the six most commonly used covenant indicators within commercial loans that are available in DealScan.[22] The impact of each of the covenants within the index is the same by assigning one point to each covenant. The specific covenant restrictions included in the index are: secured debt, dividend restriction, more than two financial ratios, asset sweep, debt sweep, and equity sweep. The covenant index measure is criticized for its lack of assessment of covenant tightness and strictness, especially with recent developments of alternative measures, such as the contract strictness measure by Murfin (2012) that captures the *ex-ante* probability of a forced renegotiation between lender and borrower. However, the Murfin covenant strictness

[21] According to Berg et al. (2013), there are over 10 different types of loan fees that can appear in bank loan contracts. However, many of these fees are included in the standard all-in-spread-drawn measure of loan price. Further, the Dealscan database available to us contains specific loan fee categories only for annual fees (included in all-in-spread-drawn) and commitment fees.

[22] Bradley and Roberts' (2004) decision on which covenants to include in the index was largely dependent on covenant categories that have been identified in the literature as the most prevalent in commercial loans (e.g., Billet, King, & Mauer, 2007; Paglia & Mullineaux, 2006; and Smith & Warner, 1979).

measure uses only financial ratio covenants. Since the covenant intensity index assesses the effects of both financial and non-financial aspects of loan contracting, it is an appropriate measure for addressing the needs of this study. Further, we retest our loan covenant analyses using the Murfin approach as the dependent variable instead of the covenant index in the robustness section, and determine that the results are not significantly different.

Other bank loan characteristics included in our study are *loan size, loan maturity, syndicated, number of lenders,* and *investment grade. Loan size* is the tranche amount corresponding to individual loan purpose, scaled back by the total assets of the firm. *Loan maturity* of the loan is reported in natural log months. *Syndicated* represents the percentage of loans financed by syndicates of lenders, versus sole lenders or other arrangements. *Number of lenders* is the natural log of the number of lenders that have a direct stake in any particular loan. *Investment grade* is a dummy-coded variable that takes a value of 1 if the firm received credit rating of Baa or higher, and 0 if the firm was rated below Baa.

3.4. Measures of Corporate Governance Characteristics

In accord with extant related literature, we examine the efficacy of a firm's corporate governance through multiple dimensions. Prior research studying which aspects of corporate governance affect firms' terms of loan contracting suggests that we explore both the board of directors and shareholder control avenues.[23] Specifically, the board of directors' characteristics that receive a great deal of research attention are *board*

[23] See, for example, Asquith et al. (2005); Bharath et al. (2011); Demiroglu and James (2010); Dennis et al. (2000); Gorton and Kahn (2000); Kim et al. (2011); Qian and Strahan (2007).

size, independence, busyness, and board presence of *experts* and *females.* Other board characteristics that we also include are directors' average *tenure* with the firm, number of directors with *international* background, and directors of *ethnic minority.* The shareholder control is examined through *board vote power* and the anti-takeover governance provisions index, *G-index.* All corporate governance variables come from the RiskMetrics database.

We measure *board size* as the natural log of the total number of directors serving on the board. To determine *independence*, we start off by reviewing directors' affiliations with a given firm and dividing them into two categories: insider versus independent. Directors who are coded as "employees" or "linked" by RiskMetrics are classified as insiders, while those who are coded as "independent" by RiskMetrics are also classified as independent by us. We calculate *independence* as the number of independent directors divided by the total number of directors on board. We define busy directors as those who serve on the board of at least three major for-profit firms.[24] *Busyness* is measured as the ratio of busy directors to total number of directors on board. To study the impact of directors' level of expertise on loan terms, we utilize directors' employment category available in RiskMetrics. We classify directors employed in accounting, investor/financial services, academics, attorney/counsel, consultant, and medical sectors as experts with potentially valuable unique knowledge

[24] This definition is consistent with the U.S. Council of Institutional Investors' Corporate Governance Policies (2009). Unlike many existing studies on busy boards, this definition does not require director independence. However, we wanted to capture the overall effect of director busyness, as well as avoid the potential multicollinearity concerns between independent directors and the traditional busy independent directors.

that they can use to advise the firm.[25] To measure *experts,* we apply the natural log to the total number of experts serving on the board of directors. Board *tenure* is calculated as the sum of the number of years that the current directors served on the board, divided by the number of directors. To study the impact of board of directors' diversity on loan contracting, we examine the role of female, internationality, and ethnic minority. *Females* is the proportion of female directors to board size. *International* is based on directors' country of employment available in RiskMetrics. For directors for whom the information is reported, if the country of employment is U.S., then we code that director as 0, otherwise we code international as 1. We add the number of international directors for each firm and divide that value by the total number of directors serving on the board. RiskMetrics also provides information about directors' ethnicity. If the ethnicity category reports racial background as African-American, Asian, or Hispanic, then *ethnic minority* variable is classified as 1, if ethnicity category indicates Caucasian background, then *ethnic minority* is classified as 0. Similar to the *international* variable, we combine the number of directors of ethnic minority for each firm and divide it by board size. *Board vote power* is defined as the percentage of outstanding stock shares held by all directors serving on the board. *G-Index* is a governance index developed and provided in RiskMetrics by Gompers, Ishii, and Metrick (2003), which is composed of 24 anti-takeover governance provisions.

[25] We also tested our models with expertise limited to the financial sector (accounting and investor/financial services), which yielded results not significantly different than using the expanded expertise definition. In addition, given the different designations of loans in our sample, the study may benefit from inclusion of broader sources of advice.

3.5. Measures of Financial Characteristics

To study firms' financial qualities, we obtain all accounting variables from Compustat for the fiscal year-end for each firm prior to the lending agreement. We measure firm size using the *market capitalization* variable, which is calculated by multiplying the firm's number of outstanding common stock shares as reported in the quarterly SEC filing reports by the price of that stock on the last day of the respective quarter. To study the impact of existing debt on terms of new loan contracting, we calculate *leverage* as the ratio of total debt held by the firm to total assets. *Sales turnover* is measured as firm's total annual sales revenue divided by total assets. *ROA* is determined as a ratio of EBITDA over total assets. *Market to book* is the ratio of book assets minus book equity plus market equity over book assets. *Current ratio* is firm's currents assets divided by current liabilities.

3.6. Descriptive Statistics

Table 1 presents a general overview of descriptive statistics on loan, corporate governance, and financial characteristics for the main loan purposes analyzed in this study. We observe that almost 97% of loans in our sample have a specific designated purpose, distributed among the eight main loan purposes that we study. Consistent with the existing literature, the price components of a loan contract vary greatly by expected use loans' proceeds.[26] Specifically, the spread yield ranges from 50.30 bps for CP backup loans to 354 bps for LBO loans, even though CP backup commitment fees at 32 bps are on par with acquisition line and takeover loans. The covenant index values also

[26] See, for example, Angbazo et al. (1998); Carey et al. (1998); Gopalan et al. (2011); Harjoto et al. (2006); Hubbard et al. (2002); Saunders and Steffen (2011).

vary significantly by loan purpose, ranging from 1.4 covenants for CP backup loans to 4.39 covenants for spinoff loans, with the overall average of 2.73 being comparable to extant covenant index research (e.g., Bradley & Roberts, 2004; Demiroglu & James, 2010; Fields et al., 2012).

The largest mean loan amount of more than $1.1 billion is made for spinoff purposes, while the smallest mean amount of about $210 million is made for LBO purposes. Expectantly, given the revolving nature of CP backup loans, these loans have the shortest maturity duration of about 22 months, whereas the average tenor for LBO loans is almost 70 months. Further, over 90% of CP backup loans in our sample are made to investment-grade firms, while none of the LBO loans are investment-grade.

Consistent with the literature on the relation between firm size and board of directors' size, LBO loans in our sample are made to small firms with fewer than average number of directors on their boards.[27] In addition, we observe that firms of asset acquisition, debt repayment, and takeover loans, have lower proportion of independent directors on their boards than firms of CP backup, corporate purposes, and working capital loans. Similarly, with an exception of spinoff loan firms, boards of restructure firms tend to be less busy, which is consistent with extant studies (e.g., Fich & Shivdasani, 2007; Gilson, 1990; Yermack, 2004). The G-Index indicates a relatively low shareholder control of around 10 anti-takeover provisions among spinoff and CP

[27] For example, Boone, Field, Karpoff, and Raheja (2007) and Coles, Daniel, and Naveen (2008) find that for larger and more complex firms, it is more optimal to have larger boards with more outside directors, while for smaller and simpler firms, it is more optimal to have smaller boards with fewer outside directors. In addition, Cornelli and Karakas (2008) find that firms following LBO restructure drastically reduce their board size to increase efficiency of the board of directors.

backup firms, but a higher shareholder control among debt repayment firms with about 8.8 provisions.

In Table 2, we provide *t*-test statistics on the differences between restructure and operations loans. As supported in the literature (e.g., Gopalan et al., 2011; Harjoto et al., 2006; Hubbard et al., 2002; Saunders & Steffen, 2011) and suggested in Table 1, the loan spread amount for restructure loans is almost 62 bps higher than for operations loans, which is statistically significant. Similar observations are made for commitment fees, both in bps and the percentage of loans with fees. The covenant index indicates that compared to operations loans, restructure loans contain about one additional covenant restriction than operations loans. Specifically, of the six covenant restrictions included in the index, only the dividend issuance covenant reports higher prevalence among operations loans, while the other five show significantly higher percentages among restructure loans. No significant differences are observed in terms of loan size and the loan amount to assets ratio, as well as the number of lenders involved in extending the loan. However, restructure loans have significantly longer maturity, while a much higher proportion of operations loans is investment-grade.

Compared to operations loans firms, firms requesting restructure loans have significantly fewer members on the board of directors, as well as boards that are less independent and less busy. Further boards of restructure loan firms have fewer financial and non-financial experts, international directors, and directors of ethnic minority. We do not find significant differences in director tenure. However, directors in operations loan firms are on average slightly older, while directors in restructure loan firms hold

higher stock ownership. According to the G-Index, restructure loan firms have slightly lower number of anti-takeover provisions in place.

Based on the total assets and market value of equity indicators, operations loan firms are significantly larger. Further, even though based on the sales to total assets ratio, operations loan firms have a slightly better sales turnover, restructure loan firms appear to post significantly more favorable ROA and current ratios. However, firms of restructure loans have higher debt ratios, both long-term and leverage. The market to book ratio is not significantly different between the two groups of loans.

4. Results

To test the effects of loan purpose and corporate governance attributes on debt contracting terms, we utilize ordinary least square (OLS) regression for both linear dependent variables, such as spread yield and loan fees, and discrete outcome variables, such as covenant index. We recognize that Poisson maximum likelihood estimation is a more appropriate tool for analyzing non-linear dependent variables. However, after comparing outcome results using both OLS and Poisson estimations, we determine that the produced outputs are not significantly different. Since OLS allows for more extensive interpretation, we present OLS results. In our analyses, we use robust standard errors adjusted for clustering at the firm level, since loans made to the same firm are more likely correlated. Further, we include year and industry dummy variables to control for possible time and industry effects.

4.1. Loan Purpose and Debt Contracting Terms

Table 3 presents multivariate statistics results relating price and non-price debt contracting terms to loan purpose, as well as the corporate governance and firm financials controls. In column 1, we examine the OLS output of loan purpose categories on loan spread. We find that acquisition line, debt repayment, LBO, spinoff, and takeover loan purposes have an increasing effect on spread, while CP backup and working capital have a decreasing effect on the dependent variable. Specifically, loans with spinoff purpose pay around 122% higher spread than loans with a different designated purpose; compared to the mean loan spread value of 121.69 bps, loans made for spinoff purposes pay almost 150 bps more. On the contrary, spread for loans with CP backup purpose is about 26% lower than for non-CP backup purposes, which is around 32 bps less than the average spread value. These results accord with prior research suggesting that lenders charge significantly higher interest rates for loans that demand immediacy, such as asset acquisition lines, buyouts, and takeovers (e.g., Megginson et al., 1995; Saunders & Schumacher, 2000), as well as for loans that are perceived by lenders as negative NPV investments, such as debt repayment and recapitalization (e.g., Angbazo et al., 1998; Denis, 1990). Further, extant literature supports lower spread yields for loans with shorter maturity duration and higher credit rating, such as CP backup and working capital loans (e.g., Gottesman & Roberts, 2004; Graham et al., 2008).

Similar to loan spread, commitment fees in column 2 are also affected by loan purpose distinction. However, we observe statistical and economical significance only among operations loans – CP backup, corporate purposes, and working capital. Our results indicate that borrowers of CP backup loans pay about 30% (8 bps) less in

commitment fees. Our findings are consistent with extant research claiming that borrowers of loans such as CP backup pay lower commitment fees as a result of previously established relationship with the leading bank (e.g., Bharath et al, 2011; Yasuda, 2005).

Next, we consider the impact of individual loan purpose categories on non-price aspects of debt contracting terms. Column 3 of Table 3 reveals that coefficients for acquisition line, LBO, spinoff, and takeover loan purposes have a positive and statistically significant relationship with covenant index, while the coefficients for CP backup, corporate purposes, and working capital loan purposes are not significantly different from zero. Economically, we observe that loans with LBO and spinoff designations contain about two additional covenants, as compared to the average covenant index value of 2.73 out of the maximum value of six. These findings are in agreement with Citron et al. (1997), Demiroglu and James (2010), and Gopalan et al. (2011), who find that restructure loans, such as acquisition lines, buyouts, and takeovers contain more and tighter covenants.

In columns 4 through 6, we test the relationship between loan purpose and loan contracting terms, where loan purpose categories are dummy-coded as either restructure or operations. Comparable to our previous assessments, these results confirm that compared to loans made for operations purposes, contract agreements of restructure loans are comprised of significantly higher spread yields and commitment fees, as well as higher number of covenant restrictions. Therefore, given that relationships of individual loan purposes with loan contracting terms are appropriately represented within either the restructure or operations purpose categories, allows us to implement the two general

purpose categories in subsequent analyses. Based on the results presented in Table 3, columns 1 through 6,we conclude that loan proceed designation indeed influences the composition of price and non-price loan contracting terms as predicted in Hypotheses 1 through 3. Further, statistics for corporate governance characteristics, loan features, and firm financial standings controls included in this table are consistent with existing loan contracting research (e.g., Anderson et al.,2004; Bradley & Chen, 2011; Chen, 2012; Fields et al., 2012; Francis et al., 2012;Klock et al., 2005).

4.2. Loan Purpose and Covenant Restrictions

To gain a better understanding of the relationship between loan designations and non-price terms of bank loan contracting, we conduct Logit maximum likelihood estimation for each component of the covenant intensity index in Table 4. Column 1 presents the effect loan purpose categories have on the security requirement of a loan. Consistent with the literature, we find acquisition line, LBO, and spinoff loans are more likely to have security requirement included in their loan contracts (e.g., Angbazo et al., 1998; John et al., 2003; Nini et al., 2009). For example, loans with LBO and spinoff designations are 25% and 37% more likely to have security requirement covenant included in their contracts than other loans, respectively.

Column 2 shows that loans of all purposes have positive and statistically significant coefficients, suggesting that when imposing dividend issuance restrictions, banks do not differentiate by expected loan use. This finding is consistent with results in Table 2, where we find that around 90% of both restructure and operations loans have dividend restrictions. Accordingly, Black and Scholes (1973), Black (1976 p. 10), and

Smith and Warner (1979) warn us that "there is no easier way for a company to escape the burden of a debt than to pay out all of its assets in the form of a dividend, and leave the creditors holding an empty shelf." Therefore, it is logical that banks insist that most loans carry the dividend issuance covenant restriction to protect themselves from borrowers' potential payout of assets to shareholders.

In column 3 of Table 4, the more than two financial ratios covenant restriction is positively related to all restructure loans (although only LBO is statistically significant) and negatively related to operations loans. In column 4, we group asset sale, debt issue, and equity issue sweep restrictions into one category.[28] The results reveal that acquisition line, LBO, spinoff, and takeover loans have positive and statistically significant effect on inclusion of sweep restriction covenants in loan contract. Of the operations loan purposes, coefficients of all categories are negative, although statistically non-significant. These results are in agreement with Campbell (2009), who states that asset acquisition loans tend to have very carefully crafted sweep covenants to ensure that they provide adequate lender protection without putting excessive hardship on the firm. Overall, our findings are supported by literature that loans extended to finance restructure purposes require higher levels of monitoring through covenant restrictions than loans made for operations purposes (e.g., Citron et al., 1997; Cumming et al., 2007).

[28] We also perform analyses for each individual sweep category, with similar results. The practice of combining sweep categories into one is also seen in Fields et al. (2012). In addition, Bradley and Roberts (2004) find that most loans contain either all three sweeps covenants, or none at all.

4.3. Loan Purpose and Price Benefits of Covenant Restrictions

Table 5 presents our results on price benefits that borrowing firms receive for including covenant restrictions in contract agreements for loans designated to finance restructure and operations purposes. We find that although the price benefit of some covenants is similar for both restructure and operations loans, other covenants affect restructure loans differently than operations loans. Specifically, consistent with Matvos (2013), we find that including the security requirement and dividend issuance restrictions reduces spread yields of both restructure and operations purpose loans by about 23% and 10%, respectively. However, the economical significance is greater for restructure loans because these loans, on average, have spreads that are about 58% (62 bps) higher than operations loans. Therefore, a 23% reduction in spread yield for restructure loans equates to about 39 bps, but only 25 bps for operations loans.

Price benefits for inclusion of financial ratios and sweep restrictions vary by loan purpose to a greater extent. The financial ratios restriction has a statistically significant price benefit of almost 12% in operations loans, but only a trivial and statistically non-significant reduction of spread in loans for restructure purposes. However, the asset sale, debt issuance, and equity issuance sweep restrictions are significantly higher and economically considerable for restructure purpose loans than operations purpose loans. For example, inclusion of the asset sale sweep restriction reduces spread yield of restructure loans by about 25% (41 bps), while the same covenant reduces spread yield of operations loans by only 13% (14 bps). Our findings are in general consent with other studies on loan covenant pricing (e.g., Bradley & Roberts, 2004; Matvos, 2013; Reisel, 2014; Wei, 2005). Overall, we observe that restructure loans receive greater price

reducing benefits for including additional covenants in loan agreements than operations loans. However, since the financial ratio restriction offers a greater benefit to operations loans than restructure loans, we conclude partial support for Hypothesis 4.

4.4. Loan Purpose, Corporate Governance Attributes, and Debt Contracting Terms

In Table 6, we test if banks apply different guiding principles in determining what constitutes quality corporate governance based on the expected designated use of a loan. Consistent with the literature, we observe that *board size* has a significant negative effect on all contract terms for both restructure and operations samples, thus suggesting that lenders look for larger boards regardless of loan purpose (e.g., Anderson et al., 2004; Fields et al., 2012). Conversely, while board *independence* does not display significant influence on restructure loans, it produces a significant negative effect on loan spread and fees within operations loans. Economically, compared to operations loan firms with no independent directors, those with 50% of independent directors enjoy lower loan spreads and fees by about 9 and 3bps, respectively. Our finding that board independence has an inverse relationship with loan price in operations loans accords with legislature and empirical research promoting board independence as an important attribute of board efficacy (e.g., Sarbanes and Oxley Act of 2002; Anderson et al., 2004; Rodriguez-Dominguez, Gallego-Alvarez, and Garcia-Sanchez, 2009). However, the non-significant effect of board independence on loan price of restructure loans also extends extant literature. For example, Gilson (1990) finds that following debt restructure, about 55% of board seats are replaced by lenders, thus implying that the pre-existing board structure of firms seeking restructure loans carries little influence over loan terms.

In accord with prior literature, we observe that the effect of board *busyness* does not substantially differ between restructure loans and operations loans, with an exception to having a lowering effect on commitment fees within the restructure loans sample.[29] Although the relationship between board *busyness* and restructure loans fees is statistically significant, economically it translates to only about 0.05% decrease in fees per one-percentage-point increase, or about 2.3% lower commitment fee if the board is comprised of 50% busy directors.

Directors' *tenure* on board represents directorship experience. Similar to Fields et al. (2012), our results in Table 6 suggest that longer directorship *tenure* decreases price components of debt contracting. Further, our finding that higher levels of expertise on the board of directors lead to lower price components of debt contracting for operations loans complements prior research studying the benefits that expert directors bring to the firm.[30] However, board expertise does not appear to have a significant impact on the cost of debt for restructure loans. Nonetheless, Cornelli and Karakas (2008) explain that expertise during restructure processes typically comes from private equity firm partners, not the internal board of directors.

Board diversity is associated with higher firm values, improved information transparency, and better oversight of managerial reporting (e.g., Adams & Ferreira, 2009; Carter, Simkins, & Simpson, 2003; Gul, Srinidhi, & Ng, 2011; Srinidhi, Gul, & Tsui,

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[29]For example, Francis et al. (2012) find a significant negative relationship between multiple directorship and loan spread; Fields et al. (2012) report a negative, although insignificant, relationship between the percentage of directors with more than four other board appointments and price and non-price costs of debt; Bradley and Chen (2011) argue that firms that allow directors to pursue their own interests enjoy lower cost of debt.

[30] For example, Xie, Davidson, and DaDalt (2003) find that expertise on the board of directors leads to lower levels of earnings management, while Agrawal and Chadha (2005) and Beasley (1996) link directorship expertise to lower probability of financial statement fraud.

2011). Our results suggest that female and foreign directors play a more important role in operations purpose loans than in restructure loans. Levi, Li, and Zhang (2013) offer that the ambivalent effect of female directors on restructure loan terms may stem from women's reputation of being less aggressive decision makers. In addition, even though foreign directors improve firms' decision making in international affairs, they are also likely less familiar with domestic rules and regulations, thus weakening board's monitoring effectiveness (e.g., Coval & Moskowitz, 2001; Masulis, Wang, & Xie, 2012).

Several recent studies find that high levels of shareholder control are undesirable to lenders because of the increases in credit risk and expropriation, and thus loan contracting terms become less attractive as shareholder control increases (e.g., Chava et al., 2009, Fields et al., 2012; Francis et al., 2012). Our results suggest that even though price terms of operations loans increase as *board vote power* increases, restructure loans are not significantly affected. However, Cremers et al. (2007) find that shareholder control is associated with higher (lower) bond yields if the firm is exposed (protected) from external control mechanisms. Lehn and Poulsen (1989), Peyer and Shivdasani (2001), and Shleifer and Vishny (1997) assert that firm restructure can be viewed as a takeover defense. Therefore, our finding of significant positive relationship between *board vote power* and cost of debt in operations loans is in agreement with extant research.

Overall, we determine that firms' corporate governance structure has a much larger impact on operations purpose loans than on restructure loans. Relying on prior literature, we attribute this phenomenon to weaker influence of restructure firms' boards of directors on decision making process during the course of corporate restructure, as

well as lower levels of predictability of successful completion of restructure project.[31] Therefore, based on our results presented in Table 6, we conclude that Hypothesis 5 is supported.

5. Robustness and Sensitivity Tests

Our analyses assume that the specifications and proxies we utilize adequately measure appropriate attributes. To ensure that our findings are not incidental, we perform additional procedures to test for robustness of our tests. Consistent with prior literature, we retest our analyses from Table 3 with alternative measures, mitigate potential endogeneity by utilizing exogenous instrumental variables approach, limit our sample to firms with no loans within the preceding two years, and test loans with a single loan purpose. We find that our results presented in Table 7 do not significantly change due to these tests, thus leading us to conclude that our results are robust and are not incidental.

In our analyses, we utilize the loan covenant intensity index as a proxy for covenant restrictiveness in loan contracts. However, as we stated previously in the discussion of variables section, one of the main limitations of the covenant intensity index is its failure to capture covenant tightness. An alternative approach developed by Murfin (2012) approximates the strictness of a loan contract through the *ex-ante* probability of a forced renegotiation between lender and borrower. The contract strictness measure is based on four elements identified in the literature as important

[31] For example, Denis and Denis (1995) report that 31% of LBO firms in their sample encountered financial distress, as well as that proceeds from asset sales following recapitalization often fall short of expectations; Peyer and Shivdasani (2001) suggest that following recapitalization, firms more likely to engage in riskier investments to raise cash needed to service debt; Gilson (1990) and Harford (2003) find that following firm restructure, a large number of incumbent directors are replaced by lenders.

components of propensity for borrower's technical default due to violation of covenant restriction: the number of financial covenants, the initial covenant slack, scaling of contractual slack, and covariance between financial covenants. To calculate contract strictness for each loan deal, we compute multivariate cumulative distribution function for the slack associated with each of the financial ratio covenants during the first quarter of the loan, scaled by variance.[32] The cdf follows normal distribution with mean 0 and variance $\sum$ that is estimated as the covariance matrix of financial ratios in the loan. To ensure that our analyses are not missing important inferences gained from measures of covenant tightness, we retest loan covenant models from Table 3 using the Murfin contract strictness measure as the dependent variable in place of the Bradley and Roberts covenant intensity index measure. Based on the results presented in Table 7, columns 1 and 2, we observe that no significant differences exist between the use of the covenant intensity index in Table 3 and the covenant strictness measure in Table 7. Therefore, we conclude that for the purposes of the current study, the contract strictness measure does not provide additional insights or advantages over the covenant intensity index.

Hermalin and Weisbach (2003) argue that empirical studies that use board structure as predicting variables typically suffer from endogeneity problems. However, our analyses assume that corporate governance characteristics and debt contracting terms are exogenous. As discussed earlier, we minimize endogeneity concern by constructing our sample where the loan cost data for our borrowing firms relate to board and other

[32] We are indebted to Justin Murfin for sharing a program used to calculate the loan covenant strictness measure.

characteristics from the previous year.[33] Next, consistent with much of the governance literature, we use an instrument for board quality in a two-stage least squares model.[34] The approach calls for the use of an instrument for each board characteristic variable. An effective instrumental variable must to be related to the suspected endogenous board structure variable, but unrelated to the error terms of the dependent variable (Wooldridge, 2012). However, identifying instruments that meet those criteria for each of the ten board quality characteristics is a virtually impossible task. Following a method used by Fields et al, (2012), we combine the six negative and statistically significant board quality characteristics from column 4 in Table 3 (*board size, independence, busyness, tenure, female present,* and *ethnic minority*) into a single board quality index by assigning point values to each of these variables. Specifically, a value of 1 is assigned to the variable within the index if it is above its cross-sectional median, and 0 otherwise. The resulting board quality index has a range from 0 to 6. Similar to Fields et al. (2012), we use the distance between the corporate headquarters of the borrowing firms and the nearest medium or large airport hub as an instrument for board quality index.[35] Since the distance between headquarters and the nearest airport is a measure of the cost to a potential director in terms of time and effort required to travel to board meetings, it is expected to have an inverse relationship with borrowers' board quality index. We report

[33] Similar lagging techniques are employed by Dittmar and Mahrt-Smith (2007) and Fields et al. (2012).
[34]For example, Bennedsen, Kongsted, and Nielsen (2008); Fields et al. (2012); Gul and Leung (2004); Knyazeva, Knyazeva, and Masulis (2013).
[35] According to Alam, Chen, Ciccotello, and Ryan (2014) and Knyazeva et al. (2013), directors' proximity to the firm affects their effectiveness, and that distance between lenders and borrowers may be an important attribute in loan contracting costs.

the second stage of the two-stage least squares model in Table 7, columns 3 and 4.[36] Our results show that the board quality index coefficient has a negative and statistically significant effect on loan spread. Therefore, we conclude that our analyses in this study are not substantially affected by endogeneity.

To alleviate the risk of reverse causality in our models, we rerun our analysis by limiting the sample only to firms that had no loans within the last two years.[37] The intuition behind this approach is to try to eliminate loans that are part of an ongoing and regular borrowing program that could significantly influence the previous year's board quality. We find that most of the relations from Table 3 are preserved in Table 7, and none of the significant coefficients change signs. Therefore, we conclude that our analyses do not suffer from reverse causality.

The majority of loan deals reported in DealScan are composed of several tranches that can be made for different loan purposes. However, the debt contracting terms often apply to the entire deal, not individual tranches. Given our emphasis on the relation between loan purpose and debt contracting terms, a concern arises whether a combination of different loan purpose tranches significantly affects loan terms. To test the legitimacy of this concern, we reduce our sample to include only loans with one tranche, thus loans made to single purpose. We find that most of the relationships from Table 3 are retained in Table 7. Therefore, we conclude that our analyses in Tables 3 through 6 are not distorted by the compounding effect of multiple loan purposes per loan deal.

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[36] In the first stage of two-stage least squares model, the distance between borrower's headquarters and the nearest airport hub is negatively and statistically significant at below the 1% level.

[37] Similar methods are used by Cheng (2008) and Fields et al. (2012).

6. Conclusion

While a great deal of research examines composition and design of loan contracts, most of the existing literature on debt contracting applies its findings indiscriminately to loans of all purposes without addressing the idiosyncratic differences in credit risk and monitoring needs that loans of various specific purposes present. To address this limitation in the literature, our study investigates the relationship between designated purpose of bank loans and contracting terms, as well as tests the differential influence of borrowers' corporate governance on loan terms of different purposes.

We find that both price and non-price cost of debt terms are influenced by designated use of loan proceeds. Specifically, loans made to finance restructure projects (i.e., asset acquisition line, debt repayment, LBO, spinoff, and takeover purposes) are more costly than loans designated for operations projects (i.e., CP backup, general corporate, and working capital purposes). The difference in cost of debt is both statistically and economically significant. For example, as similar to Graham et al. (2008), Gupta et al. (2008), and Wittenberg-Moerman (2008), we observe that spread for restructure purpose projects is, on average, about 50% higher than spread for operations purpose projects, which translates into about 60 bps. In addition, an average restructure purpose loan contains an additional covenant requirement, as compared to operations purpose loans. Further, consistent with Bradley and Roberts (2004) and Reisel (2014), we confirm that loan covenants have a reducing effect on loan spread. Thus, although spread yields for restructure purpose loans are significantly higher than those of operations loans, restructure loans gain greater benefits from inclusion of security

requirement, dividend restriction, and sweep restriction covenants. However, inclusion of financial ratio restrictions offers greater price benefits to operations loan.

We also observe that lenders indeed use different standards to assess the quality of borrowers' corporate governance for restructure versus operations loan purposes. In accord with Gilson (1990) and Harford (2003), we find that borrowers' pre-existent corporate governance structure has more influence on loans' contracting terms for operations loans than for restructure loans. Specifically, while board independence, expert directors, female directors, global directors, and directors' voting power have a significant impact on price and /or non-price components of debt cost for operations loans, these corporate governance attributes do not have significant effects on loan agreement terms for restructure purposes loans.

The results of this study indicate that loans' primary designation of proceeds has a much bigger impact on loan contracting terms than previously suggested. Based on our calculations, by failing to account for loan purpose differential, extant literature may be misstating loan spread by as much as 182 bps. In addition, although many prior studies have shown a strong relation between quality of corporate governance and more favorable loan terms, we find that corporate governance efficacy does not play the same alleviating role for loans of all purposes. As with all research, we recognize this study has its limitations which we encourage future research to address. However, by taking a modest step in investigating the effects of loan purposes on debt contracting, as well as its role in lenders' assessment of borrowers' corporate governance as a factor determining the cost of debt, we strive to enrich the body of knowledge on determinants of bank loan agreement composition.

Table 1

Descriptive Statistics

	Acquisition line (*n*=136)	Debt repayment (*n*=449)	LBO (*n*=37)	Spinoff (*n*=32)	Takeover (*n*=376)	CP backup (*n*=1,014)	General corporate purposes (*n*=1,334)	Working capital (*n*=818)	Other (*n*=137)	Total sample (n=4,333)
Loan Characteristics										
All in spread drawn (bps)	166.64	161.17	354.05	172.27	157.91	50.30	124.23	146.54	129.26	121.69
Commitment fees (bps)	32.38	39.32	49.09	46.25	33.02	32.26	16.47	31.46	34.35	28.35
Loans with commitment fees	36.03%	38.31%	29.73%	18.75%	28.46%	6.22%	27.74%	44.50%	32.12%	27.83%
Covenant index	3.39	3.14	4.22	4.39	3.63	1.40	2.44	2.64	2.45	2.73
Loans with covenants	63.24%	73.50%	56.25%	71.88%	72.07%	17.85%	46.32%	77.26%	48.91%	51.44%
Loans with secured debt covenant	52.29%	59.46%	92.31%	77.27%	53.15%	11.43%	44.17%	49.04%	46.27%	47.13%
Loans with dividend restriction covenant	83.53%	93.24%	100.0%	100.0%	81.86%	87.43%	90.97%	93.77%	77.61%	90.27%
Loans with > 2 ratio restriction covenant	37.65%	55.41%	7.69%	54.55%	45.15%	17.71%	33.50%	40.10%	40.30%	38.96%
Loans with asset sales covenant	64.71%	46.96%	76.92%	77.27%	60.34%	7.43%	29.89%	35.46%	78.26%	37.50%
Loans with debt issue covenant	49.41%	34.80%	84.62%	81.82%	63.29%	6.86%	23.97%	24.60%	88.46%	30.92%

Table 1, continued

	Acquisition line (*n*=136)	Debt repayment (*n*=449)	LBO (*n*=37)	Spinoff (*n*=32)	Takeover (*n*=376)	CP backup (*n*=1,014)	General corporate purposes (*n*=1,334)	Working capital (*n*=818)	Other (*n*=137)	Total sample (n=4,333)
Loans with equity issue covenant	51.76%	29.05%	30.77%	63.64%	54.01%	6.29%	22.50%	21.41%	61.90%	26.79%
Loan size ($ millions)	401.58	347.31	209.96	1,170.31	783.12	727.67	484.90	332.36	487.91	524.73
Months to maturity	42.06	48.66	69.95	45.06	44.21	21.65	39.65	41.62	40.69	37.54
Investment grade	36.03%	28.73%	0.00%	34.38%	31.91%	90.53%	57.20%	48.17%	44.52%	56.43%
Governance Characteristics										
Board size	9.09	8.97	7.86	9.91	9.28	11.16	9.90	9.08	9.04	9.82
Board independence	61.54%	58.28%	76.04%	71.44%	60.14%	70.26%	68.31%	66.75%	63.76%	66.45%
Board busyness	19.27%	18.47%	24.63%	41.81%	19.80%	35.34%	25.98%	21.13%	25.76%	25.83%
Director age	59.35	57.50	57.15	60.86	58.99	59.72	59.44	59.23	58.28	59.18
G-Index	9.58	8.85	9.47	10.71	9.38	10.04	9.60	9.55	9.30	9.59
Firm Financial Characteristics										
Total assets ($ millions)	4,059.11	4,715.91	3,416.38	9,463.93	9,301.00	14,893.35	11,403.38	5,961.35	6,755.18	9,857.31
Market capital. ($ millions)	4,115.08	5,501.05	1,366.14	19,657.4	6,960.05	19,867.00	9,844.06	4,715.95	11,230.9	10,385.32
ROA (%)	14.47%	14.63%	12.19%	16.52%	16.33%	15.94%	13.97%	13.49%	14.41%	14.65%
Leverage ratio	56.01%	62.27%	63.32%	67.86%	56.67%	64.58%	61.90%	56.95%	57.96%	60.92%
Current ratio	2.01	1.83	1.70	1.33	1.85	1.29	1.66	1.87	2.85	1.69

Table 2

Summary Statistics on Differences between Restructure and Operations Loans

	Restructure	Operations	Diff. (R-O)
Panel A – Bank loan characteristics			
All in spread drawn (bps)	168.0	106.3	61.66 ***
Commitment fees (bps)	36.81	30.30	6.51 ***
Percentage with commitment fees	33.50%	25.81%	7.69% ***
Covenants (for firms with at least one covenant)			
Firms with secured loans (%)	57.89%	42.27%	15.62% ***
Firms with dividend restrictions (%)	88.21%	91.77%	-3.56% **
Firms > 2 ratio restrictions (%)	48.39%	34.47%	13.92% ***
Firms with asset sales sweep (%)	55.74%	29.57%	26.17% ***
Firms with debt issue sweep (%)	49.62%	22.13%	27.49% ***
Firms with equity issue sweep (%)	42.27%	20.00%	22.27% ***
Covenant index (for firms with at least one covenant)	3.42	2.40	1.02 ***
Loan size ($ millions)	534.2	523.24	10.96
Loan amount to total assets (%)	30.80%	23.44%	7.36%
Months to maturity	46.82	34.39	12.43 ***
Number of lenders	11.88	11.94	-0.06
Investment grade (%)	30.00%	65.54%	-35.54% ***
Panel B – Corporate governance characteristics			
Board size	9.09	10.09	-1.0 ***
Number of independent directors	5.54	7.01	-1.47 ***
Proportion of independent directors (%)	60.43%	68.53%	-8.10 ***
Number of busy directors	1.93	2.95	-1.02 ***
Proportion of busy directors (%)	20.01%	27.72%	-7.71 ***
Proportion of female directors (%)	8.08%	11.03%	-2.95%
Number of financial experts	0.24	0.65	-0.41 ***
Number of non-financial experts	0.33	0.76	-0.43 ***
Number of international directors	0.11	0.20	-0.09 ***
Number of ethnic minority directors	0.32	0.68	-0.36 ***
Director tenure	9.63	8.49	1.14
Director age	58.38	59.48	-1.10 ***
Director stock ownership	7.72%	2.97%	4.75% ***
G-Index	9.22	9.73	-0.51 ***
Panel C – Firm financial characteristics			
Total assets ($ millions)	6,416.4	11,114.7	-4,698.3 ***
Market value of equity ($ millions)	5,924.6	11,685 .1	-5,750.4 ***
Sales to total assets	1.34	1.81	-0.48 *
Return on total assets (%)	15.22%	14.11%	1.11% ***
Long-term debt to total assets (%)	27.72%	24.92%	2.80% ***
Leverage ratio (%)	61.48%	59.57%	1.91% ***
Market to book ratio	1.85	1.86	-0.01
Current ratio	1.84	1.59	0.25 ***

***, **, and * denote statistical significance at the 1%, 5%, and 10%, respectively.

Table 3

Effect of Loan Purpose on Loan Contracting Terms

Variables	(1) Loan Spread	(2) Fees	(3) Covenant Index	(4) Loan Spread	(5) Fees	(6) Covenant Index
Intercept	7.325***	5.204***	4.725***	7.373***	5.068***	4.419***
	(0.1805)	(0.3183)	(0.8159)	(0.17556)	(0.3178)	(0.8079)
Loan purpose categories						
Acquisition line	0.352***	-0.099	1.056***			
	(0.0861)	(0.0939)	(0.2683)			
Debt repayment	0.256***	-0.063	0.213			
	(0.0810)	(0.0796)	(0.2264)			
LBO	0.783***	-0.050	2.261***			
	(0.1224)	(0.1841)	(0.2446)			
Spinoff	0.799***	0.197	1.922***			
	(0.1906)	(0.2195)	(0.3672)			
Takeover	0.509***	-0.083	0.860***			
	(0.0815)	(0.0844)	(0.2277)			
CP backup	-0.307***	-0.353***	-0.034			
	(0.0771)	(0.0919)	(0.2191)			
Corporate purposes	0.053	-0.131*	0.167			
	(0.0768)	(0.0437)	(0.1971)			
Working capital	-0.182**	-0.156**	0.204			
	(0.0777)	(0.0446)	(0.1966)			
Restructure				0.396***	0.310***	0.804***
				(0.0249)	(0.0265)	(0.0856)
Corporate governance characteristics						
Board Size	-0.022***	-0.021***	-0.055***	-0.025***	-0.024***	-0.059***
	(0.0052)	(0.0050)	(0.0198)	(0.0056)	(0.0051)	(0.0204)
Independence (%)	-0.097**	-0.190***	-0.318*	-0.142**	-0.171***	-0.254**
	(0.0485)	(0.0591)	(0.1893)	(0.0662)	(0.0614)	(0.1496)
Busyness (%)	-0.020***	-0.009**	-0.027	-0.022***	-0.012**	-0.033
	(0.0043)	(0.0049)	(0.0226)	(0.0055)	(0.0050)	(0.0222)
Tenure	-0.016***	-0.015***	-0.032***	-0.021***	-0.019***	-0.026***
	(0.0021)	(0.0037)	(0.0096)	(0.0028)	(0.0030)	(0.0099)
Expert present	0.019***	0.011***	0.002	0.031***	0.026***	0.015
	(0.0045)	(0.0057)	(0.0203)	(0.0057)	(0.0057)	(0.0204)
Female present	-0.017*	-0.042***	-0.027	-0.033**	-0.041***	-0.015
	(0.0096)	(0.0125)	(0.0477)	(0.0135)	(0.0130)	(0.0479)
International	-0.034**	-0.009	-0.009	-0.005	-0.010	-0.063
	(0.0151)	(0.0185)	(0.0565)	(0.0247)	(0.0192)	(0.0579)
Ethnic minority	-0.034***	-0.052**	-0.147*	-0.052***	-0.046***	-0.170**
	(0.0104)	(0.0222)	(0.0792)	(0.0135)	(0.0122)	(0.0807)
Board vote power	0.024***	0.021***	0.038	0.021***	0.024***	0.024
	(0.0074)	(0.0071)	(0.0302)	(0.0076)	(0.0073)	(0.0289)
G-Index	-0.008***	-0.016***	-0.038***	-0.020***	-0.016***	-0.031**
	(0.0030)	(0.0037)	(0.0144)	(0.0041)	(0.0038)	(0.0146)

Table 3, continued

Variables	(1) Loan Spread	(2) Fees	(3) Covenant Index	(4) Loan Spread	(5) Fees	(6) Covenant Index
Loan and firm financial control variables						
Loan size	-0.077***	-0.059***	-0.080*	-0.137***	-0.110***	-0.062
	(0.0087)	(0.0154)	(0.0407)	(0.0128)	(0.0136)	(0.0503)
Loan maturity	0.003***	0.003***	0.016***	0.005***	0.007***	0.018***
	(0.0005)	(0.0006)	(0.0017)	(0.0005)	(0.0004)	(0.0016)
Investment grade	-0.895***	-0.709***	-1.550***	-0.940	-0.725	-1.602***
	(0.0186)	(0.0293)	(0.0748)	(0.0188)	(0.0291)	(0.0748)
Market capitalization	-0.206***	-0.132***	-0.573***	-0.379***	-0.302***	-0.573***
	(0.0113)	(0.0214)	(0.0599)	(0.0188)	(0.0196)	(0.0610)
Leverage	0.176***	0.149***	0.511***	0.275***	0.214***	0.473***
	(0.0121)	(0.0208)	(0.0573)	(0.0169)	(0.0180)	(0.0574)
Sales turnover	-0.052***	-0.090***	-0.196***	-0.039**	-0.042**	-0.164**
	(0.0124)	(0.0218)	(0.0584)	(0.0165)	(0.0163)	(0.0587)
ROA	-0.103***	-0.063**	-0.076	-0.283***	-0.233***	-0.138*
	(0.0164)	(0.0255)	(0.0689)	(0.0215)	(0.0234)	(0.0704)
Market to book	-0.021***	-0.060***	-0.162***	-0.089***	-0.051***	-0.161***
	(0.0182)	(0.0103)	(0.0470)	(0.0125)	(0.0121)	(0.0467)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
F-value	431.28***	61.97***	56.50***	547.24***	81.65***	50.22***
Adjusted R^2	0.7457	0.6016	0.3971	0.7373	0.6020	0.3902
N	3,816	1,051	1,922	3,729	1,014	1,894

***, **, and * denote statistical significance at the 1%, 5%, and 10%, respectively.

Table 4

Effect of Loan Purpose on Covenant Restrictions

Variables	Security Requirement (1)	Dividend Issuance Restriction (2)	>2 Financial Ratio Restriction (3)	Asset Sale, Debt Issue, or Equity Issue Sweep (4)
Intercept	1.2554***	1.0705***	0.4102	0.7874***
	(0.2461)	(0.1765)	(0.2767)	(0.2623)
Loan purpose categories				
Acquisition line	0.1757**	0.1281**	0.0513	0.3629***
	(0.0883)	(0.0634)	(0.0994)	(0.0942)
Debt repayment	0.0985	0.2045***	0.0191	0.0132
	(0.0796)	(0.0571)	(0.0896)	(0.0849)
LBO	0.2510***	0.2064**	0.3516***	0.3859***
	(0.0881)	(0.0899)	(0.0995)	(0.1139)
Spinoff	0.3700***	0.2857***	0.1351	0.3608***
	(0.1011)	(0.0896)	(0.1405)	(0.1331)
Takeover	0.1032	0.1005*	0.0043	0.2636***
	(0.0805)	(0.0578)	(0.0906)	(0.0858)
CP backup	-0.0326	0.2202***	-0.0408	-0.1086
	(0.0825)	(0.0592)	(0.0904)	(0.0879)
Corporate purposes	-0.0725	0.2012***	-0.0028	-0.0454
	(0.0775)	(0.0555)	(0.0873)	(0.0826)
Working capital	-0.1044	0.2219***	-0.0044	-0.0097
	(0.0776)	(0.0556)	(0.0876)	(0.0827)
Corporate governance characteristics				
Board Size	-0.0094*	-0.0043	-0.0107*	-0.0136**
	(0.0053)	(0.0038)	(0.0061)	(0.0059)
Independence (%)	-0.0071	-0.0614	0.1141*	-0.0115*
	(0.0624)	(0.0447)	(0.0701)	(0.0066)
Busyness (%)	-0.0003	-0.0020	-0.0184***	-0.1081
	(0.0059)	(0.0043)	(0.0066)	(0.0691)
Tenure	-0.0045*	0.0043**	-0.0001	-0.0112***
	(0.0026)	(0.0019)	(0.0029)	(0.0029)
Expert present	0.0106*	0.0018	-0.0257***	0.0021
	(0.0056)	(0.0040)	(0.0062)	(0.0063)
Female present	-0.0232*	0.0184**	-0.0500***	0.0119
	(0.0127)	(0.0043)	(0.0136)	(0.0145)
International	0.0758***	-0.0151	0.0108	0.0459*
	(0.0219)	(0.0157)	(0.0225)	(0.0263)
Ethnic minority	0.0286*	0.0113	-0.0181	-0.0026
	(0.0159)	(0.0114)	(0.0171)	(0.0176)
Board vote power	-0.0111	-0.0107*	0.0388***	0.0038
	(0.0079)	(0.0057)	(0.0086)	(0.0089)
G-Index	-0.0123***	-0.0013	-0.0102**	-0.0054
	(0.0039)	(0.0028)	(0.0045)	(0.0045)

Table 4, continued

Variables	Security Requirement (1)	Dividend Issuance Restriction (2)	>2 Financial Ratio Restriction (3)	Asset Sale, Debt Issue, or Equity Issue Sweep (4)
Loan and firm financial control variables				
Loan size	-0.0235**	-0.0101	-0.0044	-0.0077
	(0.0117)	(0.0084)	(0.0147)	(0.0148)
Loan maturity	0.0032***	0.0020***	0.0027***	0.0023***
	(0.0004)	(0.0003)	(0.0004)	(0.0005)
Investment grade	-0.4596***	-0.0409***	-0.1934***	-0.3598***
	(0.0220)	(0.0158)	(0.0239)	(0.0218)
Market capitalization	-0.0638***	-0.0108	-0.0446***	-0.1298***
	(0.0165)	(0.0118)	(0.0178)	(0.0178)
Leverage	0.0276*	0.0014	0.0068	0.1714***
	(0.0156)	(0.0112)	(0.0171)	(0.0175)
Sales turnover	0.0108	-0.0015	-0.0027	-0.0843***
	(0.0157)	(0.0113)	(0.0178)	(0.0171)
ROA	-0.0605***	-0.0082	0.0105	0.0170
	(0.0194)	(0.0139)	(0.0235)	(0.0208)
Market to book	-0.0188	-0.0096	-0.0069	-0.0456***
	(0.0135)	(0.0097)	(0.0138)	(0.0133)
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Pseudo-R^2	0.3694	0.0560	0.1685	0.2663
N	1,922	1,922	1,922	1,922

***, **, and * denote statistical significance at the 1%, 5%, and 10%, respectively.

Table 5

Effect of Covenant Inclusion on Loan Price by Loan Purpose

Dependent Variable = Covenant price benefit		
	Restructure Purpose Loans (1)	Operations Purpose Loans (2)
Intercept	1.7068***	1.7963***
	(0.3893)	(0.2676)
Covenant Restrictions		
Security requirement	0.2298***	0.2387***
	(0.0389)	(0.0291)
Dividend issuance restriction	0.0981**	0.1144***
	(0.0455)	(0.0247)
> 2 financial ratios restriction	0.0191	0.1151***
	(0.0318)	(0.0241)
Asset sale sweep restriction	0.2469***	0.1317***
	(0.0462)	(0.0412)
Debt issuance sweep restriction	0.0975**	-0.0679
	(0.0488)	(0.0445)
Equity issuance sweep restriction	0.1963***	0.1089***
	(0.0429)	(0.0386)
Corporate governance characteristics		
Board Size	0.0118	-0.0024
	(0.0082)	(0.0057)
Independence (%)	-0.0777	-0.0655
	(0.0919)	(0.0716)
Busyness (%)	-0.0154*	-0.0108*
	(0.0062)	(0.0060)
Tenure	-0.0119***	-0.0066**
	(0.0039)	(0.0031)
Expert present	-0.0019	0.0122**
	(0.0120)	(0.0058)
Female present	-0.0172	-0.0175
	(0.0218)	(0.0130)
International	0.03667	-0.0333*
	(0.0446)	(0.0198)
Ethnic minority	-0.0559**	-0.0001
	(0.0280)	(0.0145)
Board vote power	0.0034	-0.0053
	(0.0115)	(0.0087)
G-Index	-0.0290**	-0.0092**
	(0.0062)	(0.0044)

Table 5, continued

	Restructure Purpose Loans (1)	Operations Purpose Loans (2)
Loan and firm financial control variables		
Loan size	-0.0805***	-0.0756***
	(0.0182)	(0.0133)
Loan maturity	0.0006	-0.0007
	(0.0006)	(0.0005)
Investment grade	0.0802**	0.3456***
	(0.0406)	(0.0286)
Market capitalization	-0.0588**	-0.1987
	(0.0257)	(0.0183)
Leverage	0.0747***	0.1274
	(0.0251)	(0.0178)
Sales turnover	-0.0064	-0.0028
	(0.0239)	(0.0178)
ROA	-0.0266	-0.1365***
	(0.0362)	(0.0217)
Market to book	-0.0051	-0.0353*
	(0.0208)	(0.0135)
Year dummies	Yes	Yes
Industry dummies	Yes	Yes
F-value	21.09***	46.14***
Adjusted R^2	0.4301	0.3799
N	640	1,769

***, **, and * denote statistical significance at the 1%, 5%, and 10%, respectively.

Table 6

Effect of Corporate Governance Attributes on Loan Cost by Loan Purpose Categories

	Restructure Purpose Loans			Operations Purpose Loans		
Variables	Loan Spread (1)	Fees (2)	Covenant Index (3)	Loan Spread (4)	Fees (5)	Covenant Index (6)
Intercept	7.059***	5.536***	1.060	8.317***	5.798***	7.550***
	(0.5123)	(0.6035)	(1.7838)	(0.2792)	(0.2730)	(1.1085)
Corporate governance characteristics						
Board Size	-0.022**	-0.028**	-0.114***	-0.025***	-0.023***	-0.051**
	(0.0107)	(0.0132)	(0.0378)	(0.0064)	(0.0056)	(0.0255)
Independence (%)	0.019	-0.041	0.181	-0.195***	-0.213***	-0.384
	(0.1197)	(0.1224)	(0.4317)	(0.0647)	(0.0700)	(0.2947)
Busyness (%)	-0.054***	-0.048***	0.068	-0.014**	-0.006	-0.035
	(0.0135)	(0.0137)	(0.0494)	(0.0061)	(0.0054)	(0.0232)
Tenure	-0.025***	-0.022***	-0.003	-0.021***	-0.019***	-0.041***
	(0.0055)	(0.0066)	(0.0178)	(0.0033)	(0.0033)	(0.0117)
Expert present	0.015	0.027	0.047	-0.033***	-0.025***	-0.004
	(0.0135)	(0.0189)	(0.0527)	(0.0065)	(0.0060)	(0.0225)
Female present	-0.043	-0.015	-0.048	-0.031**	-0.045***	-0.040
	(0.0276)	(0.0317)	(0.1013)	(0.0153)	(0.0142)	(0.0535)
International	0.048	-0.035	0.027	-0.013	-0.008	0.175**
	(0.0691)	(0.0645)	(0.1910)	(0.0260)	(0.0202)	(0.0885)
Ethnic minority	-0.087**	-0.004	-0.254*	-0.040***	-0.048***	0.022
	(0.0376)	(0.0390)	(0.1443)	(0.0144)	(0.0128)	(0.0617)
Board vote power	0.019	0.023	0.035	0.026***	0.027***	0.050
	(0.0157)	(0.0187)	(0.0546)	(0.0089)	(0.0079)	(0.0377)
G-Index	-0.005	-0.017*	-0.055**	-0.026***	-0.017***	-0.082***
	(0.0084)	(0.0098)	(0.0267)	(0.0047)	(0.0042)	(0.0171)
Loan and firm financial control variables						
Loan size	-0.091***	-0.086***	0.050	-0.153***	-0.118***	-0.122**
	(0.0238)	(0.0289)	(0.0846)	(0.0152)	(0.0155)	(0.0606)
Loan maturity	0.006***	0.007***	0.025***	0.0042***	0.007***	0.015***
	(0.0009)	(0.0011)	(0.0027)	(0.0006)	(0.0005)	(0.0020)
Market capitalization	-0.230***	-0.222***	-0.350***	-0.413***	-0.318***	-0.673***
	(0.0351)	(0.0433)	(0.1169)	(0.0214)	(0.0217)	(0.0710)
Investment grade	-0.969***	-0.730***	-1.468***	-0.927***	-0.710***	-1.610***
	(0.0377)	(0.0633)	(0.1713)	(0.0216)	(0.0361)	(0.0834)
Leverage	0.201***	0.189***	0.403***	0.295***	0.220***	0.537***
	(0.0351)	(0.0441)	(0.1207)	(0.0195)	(0.0197)	(0.0673)
Sales turnover	-0.050	-0.067*	-0.151	-0.037**	-0.034*	-0.201***
	(0.0327)	(0.0364)	(0.1211)	(0.0140)	(0.0182)	(0.0642)
ROA	-0.175***	-0.156***	-0.356**	-0.294***	-0.240***	-0.052
	(0.0519)	(0.0599)	(0.1567)	(0.0231)	(0.0252)	(0.0793)
Market to book	-0.037	-0.013	-0.196**	-0.095***	-0.053***	-0.172***
	(0.0255)	(0.0268)	(0.0982)	(0.0141)	(0.0136)	(0.0555)

Table 6, continued

Variables	Restructure Purpose Loans			Operations Purpose Loans		
	Loan Spread (1)	Fees (2)	Covenant Index (3)	Loan Spread (4)	Fees (5)	Covenant Index (6)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
F-value	101.05***	22.03***	12.97***	422.20***	61.31***	49.01***
Adjusted R^2	0.6884	0.5756	0.2733	0.7246	0.5969	0.4004
N	816	522	574	2,882	2,452	1,295

***, **, and * denote statistical significance at the 1%, 5%, and 10%, respectively.

Table 7

Robustness Checks

	Murfin – Covenant Strictness		Two-Stage Least-Square		No loans within last 2 years		Loans with single purpose	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	1.2296***	1.2989***	10.083***	9.8871***	10.171***	10.382***	10.7019***	9.0001***
	(0.1211)	(0.1130)	(0.9956)	(0.9499)	(1.3425)	(1.3004)	(1.5874)	(1.4593)
Loan purpose categories								
Acquisition line	0.1618***		1.4254***		1.5464***		0.7350*	
	(0.0514)		(0.4324)		(0.3834)		(0.4355)	
Debt repayment	0.1096**		0.9319**		1.3839***		0.0990	
	(0.0473)		(0.3779)		(0.3075)		(0.3693)	
LBO	0.1979***		3.2566*		3.7780***		4.4074***	
	(0.0593)		(1.8928)		(0.3821)		(0.4103)	
Spinoff	0.2534***		4.1989***		4.2070***		1.8808**	
	(0.0701)		(0.5912)		(0.5238)		(0.8411)	
Takeover	0.1571***		1.8086***		2.2097***		1.0001***	
	(0.0481)		(0.3809)		(0.3111)		(0.3017)	
CP backup	-0.0352		-0.3582		-0.0382		-1.0773***	
	(0.0483)		(0.3914)		(0.3180)		(0.3701)	
Corporate purposes	-0.0439		0.4072		-0.6819**		-0.4548	
	(0.0465)		(0.3663)		(0.2959)		(0.3521)	
Working capital	-0.0596		-0.5178*		-0.8549**		-0.1363*	
	(0.0463)		(0.3016)		(0.2944)		(0.0849)	
Restructure		0.1072***		1.0458***		1.1573***		0.8864***
		(0.0109)		(0.1006)		(0.1182)		(0.1304)
Corporate governance characteristics								
Board quality index			-0.1265***	-0.1084***				
			(0.0401)	(0.0413)				
Board size	-0.0059*	-0.0066**			-0.0930***	-0.0466	-0.0336	-0.0351
	(0.0031)	(0.0032)			(0.0300)	(0.0352)	(0.0275)	(0.0395)

Table 7, continued

	Murfin – Covenant Strictness		Two-Stage Least-Square		No loans within last 2 years		Loans with single purpose	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Independence (%)	-0.0073**	-0.0094***			-0.6355**	-0.1025***	-0.8749**	-0.1111**
	(0.0028)	(0.0028)			(0.3311)	(0.0375)	(0.3979)	(0.0458)
Busyness (%)	-0.0075***	-0.0073***			-0.0806**	-0.1228***	-0.0048	-0.0139
	(0.0027)	(0.0027)			(0.0355)	(0.0372)	(0.0302)	(0.0319)
Tenure	-0.0028**	-0.0023*			-0.0395***	-0.0323**	-0.0405***	-0.0427***
	(0.0012)	(0.0012)			(0.0134)	(0.0138)	(0.0141)	(0.0319)
Expert present	-0.0056**	-0.0032			-0.0262	0.0013	0.0501*	0.0695**
	(0.0025)	(0.0024)			(0.0306)	(0.0301)	(0.0294)	(0.0297)
Female present	0.0181***	0.0172***			0.0243	0.0345	-0.1287**	-0.1434**
	(0.0063)	(0.0064)			(0.0740)	(0.0745)	(0.0621)	(0.0632)
International	-0.0529***	-0.0545***			0.2485**	0.2836**	0.2298**	0.1732
	(0.0101)	(0.0103)			(0.1228)	(0.1230)	(0.1129)	(0.1239)
Ethnic minority	-0.0188**	-0.0137*			-0.1441*	-0.1946**	0.1039	0.0703
	(0.0076)	(0.0076)			(0.0842)	(0.0872)	(0.0779)	(0.0780)
Board vote power	0.0061**	0.0047			-0.0016	-0.0382	-0.0559	-0.0435
	(0.0030)	(0.0035)			(0.0437)	(0.0439)	(0.0476)	(0.0495)
G-Index	-0.0039**	-0.0038**	-0.0815***	-0.0792***	-0.0642***	-0.0543**	-0.0577***	-0.0552***
	(0.0019)	(0.0019)	(0.0178)	(0.0182)	(0.0206)	(0.0211)	(0.0215)	(0.0235)
Loan and firm financial characteristics								
Loan size	-0.0207***	-0.0231***	-0.2265***	-0.2182***	-0.2128***	-0.2039***	-0.2037***	-0.1410*
	(0.0065)	(0.0066)	(0.0553)	(0.0566)	(0.0618)	(0.0728)	(0.0786)	(0.0730)
Loan maturity	0.0016	0.0031	0.0198***	0.0231***	0.0197***	0.0224***	-0.0022	-0.0001
	(0.0020)	(0.0019)	(0.0021)	(0.0021)	(0.0025)	(0.0025)	(0.0029)	(0.0029)
Market capitalization	-0.0877***	-0.0897***	-0.8752***	-0.8567***	-0.8586***	-0.8479***	-0.8213***	-0.8562***
	(0.0083)	(0.0085)	(0.0752)	(0.0776)	(0.0893)	(0.0935)	(0.0987)	(0.1031)
Leverage	0.0982***	0.0953***	0.8169***	0.7566***	0.8535***	0.7761***	0.4873***	0.4387***
	(0.0082)	(0.0083)	(0.0716)	(0.0732)	(0.0883)	(0.0902)	(0.0911)	(0.0933)
Sales turnover	-0.0545***	-0.0517***	-0.2762***	-0.2454***	-0.2847***	-0.2392***	0.0305	0.0442
	(0.0074)	(0.0075)	(0.0745)	(0.0768)	(0.0895)	(0.0886)	(0.0818)	(0.0841)

Table 7, continued

	Murfin – Covenant Strictness		Two-Stage Least-Square		No loans within last 2 years		Loans with single purpose	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ROA	-0.0611***	-0.0665***	-0.2947***	-0.4109***	-0.3292***	-0.4024***	-0.1223	-0.2075*
	(0.0096)	(0.0098)	(0.0919)	(0.0951)	(0.1121)	(0.1066)	(0.1022)	(0.1117)
Market to book	-0.0126***	-0.0131**	-0.2973***	-0.3014***	-0.3047***	-0.3156***	-0.1779***	-0.1927***
	(0.0063)	(0.0065)	(0.0642)	(0.0662)	(0.0729)	(0.0696)	(0.0661)	(0.0686)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.3349	0.3220	0.3193	0.2930	0.3288	0.3032	0.2652	0.2385
N	2,023	1,997	1,822	1,795	1,372	1,356	990	971

***, **, and * denote statistical significance at the 1%, 5%, and 10%, respectively.

ESSAY 2: DO BUSY DIRECTORS INFLUENCE THE COST OF DEBT? AN EXAMINATION THROUGH THE LENS OF TAKEOVER VULNERABILITY

We investigate the effects of board busyness on firms' cost of debt by analyzing the relationship through a hostile takeover framework. Using DealScan database, we draw a sample of 2,964 loans from 1,057 unique borrowers for the period between 1999 and 2006. First, we establish an inverse relationship between board busyness and firms' hostile takeover vulnerability by implementing the takeover vulnerability index (adapted from the Gompers et al. (2003) anti-takeover governance provisions index). Although the link between board busyness and the propensity of a hostile takeover has been examined *ex post* in prior research, the takeover vulnerability index allows us to study the relationship *ex-ante*, while still yielding similar results. Second, we test the relationship between board busyness and cost of debt. Our results suggest that as the level of board busyness increases, the cost of debt decreases. Economically, the cost of debt for firms whose board is comprised of 40% busy directors is about 27 basis points lower compared to those without busy directors. Overall, our results provide important implications to the body of literature on board busyness.

1. Introduction

The purpose of this study is to examine the relationship between board busyness[38] and the cost of debt for a sample of private loan issues. Extant research documents that creditors recognize and reward borrowers with board characteristics, such as independence, expertise, and diversity, by offering favorable loan terms because such firms pose fewer risks of default on a loan.[39] However, the effect of board busyness on bondholders has been largely ignored, even though board busyness received significant attention for its impact on firm performance, and thus its effect on shareholders (e.g., Ferris, Jagannathan, & Pritchard, 2003; Fich & Shivdasani, 2006). Therefore, to gain a more global understanding of the board busyness characteristic, as well as its role in the overall board composition, it is important to analyze board busyness in the context of lending agreements.

Much of the extant board busyness literature focuses on its negative effect on firm performance.[40] However, along a less traveled path, evidence suggests that lenders may be less perturbed by the negative aspects of board busyness than shareholders, and may even indicate preference for boards with busy directors in the form of lending agreements

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[38] Board busyness refers to the percentage of the board of directors' members who hold additional outside board appointments at other major firms. According to the U.S. Council of Institutional Investors' Corporate Governance Policies (2009), directors who serve on more than two additional boards of for-profit corporations are classified as "busy."

[39] For example, Anderson, Mansi, and Reeb (2004) find that firms with large and independent boards enjoy narrower yield spreads; Ashbaugh-Skaife, Collins, and LaFond (2006) link strong boards (independent, with high levels of stock ownership and high levels of expertise) with high credit ratings; and more recently, Fields, Fraser, and Subrahmanyam (2012) suggest that firms with quality boards of directors (specifically, independent, diverse, and with low CEO ownership) have fewer financial ratio covenant restrictions included in debt contracts.

[40] Fich and Shivdasani (2006), as well as Core, Holthausen, and Larker (1999), Shivdasani and Yermack (1999), and Jiraporn, Kim, and Davidson (2008) provide evidence that the monitoring ability of directors with multiple appointments decreases and the firm performance suffers because busy directors are distracted and are not able to devote sufficient attention to a given firm.

with lower cost of debt terms. In particular, using actual takeover bids to construct the probability of a hostile takeover, Shivdasani (1993) shows that firms whose outside directors hold fewer additional directorships are more likely to be identified as hostile takeover targets. Further, several other studies link lower takeover vulnerability to a lower cost of debt (e.g., Klock, Mansi, & Maxwell, 2005; Cremers, Nair, & Wei, 2007). However, even though an inverse relationship between board busyness and the cost of debt is implied through these separate streams of research, to our knowledge this connection has not been formally established. Therefore, we investigate if board busyness indeed lowers the cost of debt, or if the link implied in the literature is merely incidental.

We address the purpose of this study through the hostile takeover framework. We choose the takeover setting because it is the common denominator between the board busyness and the cost of debt streams of research, thus allowing for easier comparison of our results to those of extant research studies (e.g., Shivdasani, 1993; Klock et al., 2005; Cremers et al., 2007). In addition, although hostile takeovers tend to increase shareholders' wealth, the interests of both the busy directors and lenders are aligned on the issue of avoiding takeovers. Specifically, takeover is undesired by busy directors because association with a takeover target typically damages their directorship reputation[41] and, thereby, causes a potential loss of lucrative[42] current and/or future additional outside directorship opportunities. Takeovers are detrimental to creditors as

[41]The reputation hypothesis asserts that busy directors have an incentive to avoid serving on boards of firms that may be takeover targets because association with such firms damages their directorship reputations to the point where their current and/or future directorship appointments may be lost (e.g., Harford, 2003; Wang, Sahr, Ning, & Davidson, 2010).

[42] According to the NACD Director Compensation Report for 2009, the median directorship compensation ranged between $75,490 for directors in smaller firms and $216,186 for directors in the top 200 firms.

well, due to the potential negative consequences of a takeover for the target firm, such as increased credit risk,[43] higher probability of loan default and bankruptcy filing as a result of elevated levels of debt,[44] and possible reordering of priority claims in the event of bankruptcy.[45]

Using a sample of 2,964 private loans from the DealScan database of detailed loan information for the period between 1999 and 2006, we address the purpose of this study with a two-prong approach. First, we build on Shivdasani (1993) study to test if the takeover vulnerability index[46] is an appropriate tool to measure the likelihood of a takeover. Specifically, we include similar control variables, but substitute Shivdasani's dichotomous dependent variable measure (1 if a firm is a hostile takeover target, and 0 otherwise) with the takeover vulnerability index. Although Shivdasani's dichotomous takeover target variable is a more precise statistical measure, it can only be applied *ex post*, since it requires an actual placement of a hostile takeover bid for a firm to be classified as a takeover target. On the contrary, the takeover vulnerability index is able to measure the likelihood of a takeover *ex-ante,* because it allows for identification of a potential takeover target before the actual bid is made. Second, after controlling for takeover vulnerability, we examine the relationship between board busyness and the cost of debt.

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[43] According to Billet, King, and Mauer (2004), takeovers are often accompanied by an increase in asset risk or reduction in credit rating of the target firm, thus increasing credit risk.

[44]For example, Kim and McConnell (1977), Cook and Martin (1991), Warga and Welch (1993) and Ghosh and Jain (2000) report that target firms experience significant leverage increases after a takeover.

[45] According to Franks and Torous (1989), Weiss (1990), and Eberhart, Moore, and Roenfeldt (1990), even if priority covenants are in place to prevent the firm from issuing bonds of equal or higher seniority, these rules are not always upheld in the case of financial distress, such as hostile takeover.

[46] The takeover vulnerability index is the inverse of Gompers, Ishii, and Metrick (2003) governance index, and thus measures the firm's exposure to takeover risk. The takeover vulnerability index has been used in extant research studies, such as Chava, Livdan, and Purnanandam (2009).

Our results are consistent with previous research studies, suggesting that busy directors are prone to take actions to help prevent takeovers of their firms (e.g., Gilson, 1990; Shivdasani, 1993). We find support for this relationship even though we use the takeover vulnerability index (an *ex-ante* measure) to determine the likelihood of a firm's takeover, as compared to Shivdasani's (1993) dichotomous takeover target variable (an *ex post* measure). Thus, we conclude that the takeover vulnerability index is a valid measure of a firm's propensity to becoming a takeover target. We find that busy directors are most strongly associated with takeover provision categories that are designed to delay and protect against takeover bids.

Next, we find that indeed board busyness has a negative relationship with the cost of debt, even after controlling for other board composition, loan, and borrower financial characteristics. These results indicate that contrary to much of the extant research[47] suggesting that busy directors hinder firm performance, and are thereby detrimental to their firms, we find support that busy directors are instrumental in reducing credit risk, and thus are an important and beneficial component of board composition in lowering the firm's cost of debt. Specifically, our results point to over 27 basis points decrease in the cost of debt for firms whose board composition consists of at least 40% busy directors. Similarly, firms with at least four busy directors or three busy independent directors enjoy cost of debt that is about 18 and 14 basis points lower, respectively, than their counterparts without busy directors. To ensure that our findings are not driven by other

[47] See, for example, Core et al. (1999), Fich and Shivdasani (2006), Jirapornet al, (2008) and Shivdasani and Yermack (1999).

factors, we performed a series of robustness tests and conclude that our findings are robust.

The remainder of this paper is organized as follows. Section 2 will discuss relevant literature to develop testable hypotheses. Section 3 will describe the data and give summary statistics. Section 4 will provide analyses that test the main research questions of the study. Section 5 will examine our results for robustness. Section 6 will present a summary of the findings and our concluding remarks.

2. Background Literature

2.1. Agency Conflicts

Modern-day firms depend on both outside equity and debt claims for their capital needs for growth and expansion. For example, in 2011, U.S. domiciled corporations raised more than $1 trillion of new external capital, of which almost 88% was some form of debt financing (i.e., bonds, syndicated debt, or other types of loans).[48] However, according to the agency theory, firms that use both sources of capital are faced with conflicting interests among the equity holders, managers, and debt holders (e.g., Jensen & Meckling, 1976; Jensen, 1986; Harris & Raviv, 1990; Stulz, 1990; Armstrong, Guay, & Weber, 2010). Focusing on the relationship between equity holders and debt holders, literature states that one of the main sources of conflict is asset misappropriation of debt holders' monies into risky and negative net present value (NPV) projects (e.g., Harris & Raviv, 1991; Blanchard, Lopez-de-Silanes, & Shleifer, 1994; Richardson, 2006;

[48] The data supporting these statistics comes from http://www.federalreserve.gov/econresdata/releases/corpsecure/current.htm.

Armstrong et al., 2010). Specifically, debt holders prefer for the firm to invest debt capital into low-risk projects to increase the probability that, in the event of project failure, the investment is recovered. Equity holders, on the other hand, have an incentive to invest debt capital into high-risk projects because they profit if the project succeeds; if the project fails, however, the majority of the cost is borne by the debt holders.

Another major source of dissent between equity holders and debt holders is the use of "disciplinary" hostile takeovers[49] (e.g. Gompers et al., 2003; Cremers et al., 2007). Equity holders are receptive to the use of a takeover because it strengthens the firm's shareholder control (e.g., Jensen, 1988; Shleifer & Vishny, 1986). Since equity holders are concerned with wealth maximization, if the firm fails to perform as expected, they have an incentive to "discipline" the firm's existing management by replacing/controlling it with a management team of another firm through a hostile takeover.[50] By engulfing the takeover target firm, the bidding firm is able to eliminate many of the inefficiencies and create positive synergies that increase the value of the stock for equity holders of both previously separate firms (McConnell & Nantell, 1985; Jensen & Ruback, 1983; Goergen & Renneboog, 2004).

Debt holders, on the other hand, prefer to avoid lending to firms with a high likelihood of becoming a takeover target because the increased credit risks typically

[49]According to Shleifer and Vishny (1997), takeovers are rapid-fire mechanisms for owner concentration. "In a typical hostile takeover, a bidder makes a tender offer to the dispersed shareholders of the target firm, and if they accept this offer, acquires control of the target firm and so can replace, or at least control, the management." (p.756)

[50] Although hostile takeovers are not as prevalent in 2000's as they were in the 1980's, takeover bidders such as the shareholder activist Carl Icahn still watch for firms with weak corporate governance for a potential takeover opportunity.

outweigh the potential profitable outcomes.[51] According to Billet et al. (2004), even though the below-investment-grade target bonds earn positive returns upon the takeover announcement, investment-grade target bonds experience negative returns. Further, by lending to a firm with a high probability of a takeover, debt holders face an increased level of credit risk due to an increase in asset risk or a reduction in the credit rating of the target firm. It is also not uncommon for target firms to experience significant leverage increases after a takeover, thus increasing the probability of loan default and bankruptcy filing (Kim & McConnell, 1977; Cook & Martin, 1991; Warga & Welch, 1993; Ghosh & Jain, 2000). Finally, lenders face the risk of potential reordering of priority claims, even if priority claims are in place to prevent the target firm from issuing bonds of equal or higher seniority, because these rules are not always upheld in the case of financial distress (Franks & Torous, 1989; Weiss, 1990; Eberhartet al., 1990).

2.2. Board Busyness

Corporate governance consists of several crucial components that are necessary for successful operation of the firm and its relationships with both the direct and indirect stakeholders. One of the most important components of strong corporate governance is an effective board of directors. According to the Business Roundtable Principles of Corporate Governance (2010), "the paramount duty of the board of directors of a public corporation is to select a Chief Executive Officer and to oversee the CEO and other

[51] This statement is not meant to imply that lenders do not value profitable firms. Instead, debt holders tend to mitigate profitability risks by relying on loan covenants, which according to Rajan and Winton (1995) are "clauses in a loan contract that require the borrower to take or refrain from various actions" (p.1113). Covenants vary substantially in their designated restrictions, such as requiring collateral, restricting dividend payouts, imposing thresholds on financial data, and forcing early retirement of the loan in the event that the firm sells excessive amount of assets or issues additional capital either through debt or equity (Bradley & Roberts, 2004).

senior management in the competent and ethical operation of the corporation on a day-to-day basis" (p. 3). However, the board of directors governing bodies provide limited regulation with regards to specific guidance on how directors are expected to perform their job. Further, the composition of the board of directors is generally also open to interpretation. For example, it is not clear whether the board is more effective when it is large or small (e.g., Boone, Field, Karpoff, & Raheja, 2007; Coles, Daniel, & Naveen, 2008), diverse or uniform (e.g., Carter, Simkins, & Simpson, 2003; Masulis, Wang, & Xie, 2012), and whether it is better for directors to own many stock shares versus few shares (e.g., Ahmed & Duellman, 2007; Cremers et al., 2007). In addition, recently a new controversial dimension of board composition has emerged in the literature – board busyness.[52]

There has been a great deal of debate on whether busy boards are effective in accomplishing their directorship tasks. Ferris et al. (2003) investigate the relationship between busy boards and firm performance and find that firm performance does not suffer when guided by busy directors. In fact, in some cases they even report a positive relationship between a firm's performance and the additional directorships acquired by its board members. Using several indirect tests, Ferris et al. conclude that busy directors devote sufficient time to their duties and do not shirk on their responsibilities.[53] Ferris et al.'s findings have been echoed by Harris and Shimizu (2004), Kaplan and Reishus (1990), and Booth and Deli (1996). These authors explain their results as a function of

[52]Fich and Shivdasani (2006) define firm's board of directors as "busy" if the majority of that board's directors serve of three or more boards. By extending this definition, we refer to directors who serve on three or more boards as "busy directors."

[53]Specifically, Ferris et al. (2003) determined that busy directors are equally likely to serve on committees as non-busy directors, and are not more likely to be sued than non-busy directors. From these tests they drew conclusions that busy directors are equally involved in board matters as non-busy directors.

high quality directors who are able to multi-task and possess extensive levels of knowledge and experience that they share with their management team to help the firm achieve its goals.

However, the stance of Ferris et al. (2003) and the other studies with similar results that support positive relationship between firm performance and busy boards has been challenged by Fich and Shivdasani (2006). Fich and Shivdasani identified methodological weaknesses in the Ferris et al. study, which they conclude are interfering with the results reported by those authors. By using more direct and robust tests, Fich and Shivdasani are able to show that busy directors are, in fact, less effective in performing their duties, and as a result, busy boards are not effective monitors of management's activities.[54] Nevertheless, some studies, such as Chakravarty, Marisetty, and Veeraraghavan (2009), find that even when using direct and robust tests similar to Fich and Shivdasani, there are certain settings and conditions (such as the presence of institutional voids in emergent economies) under which board busyness has a positive relationship on firm performance.[55] Further, Field, Lowry, and Mkrtchyan (2013) find that busy directors are a desirable feature among smaller and newer firms looking to launch an IPO.

Although one of the primary duties of the board of directors involves representing the equity holders in overseeing the firm's management's operation of the firm, they

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[54]Fich and Shivdasani (2006) find that firms with busy boards have lower market-to-book ratios than firms with non-busy boards; firms with busy boards have lower sensitivity of CEO turnover to performance; and stock prices increase when busy directors cease their directorship, but decrease when a busy director is elected.

[55]Chakravarty et al. (2011) find that in emergent economies standalone firms are more likely to lack institutional affiliation, and that busy outside directors (with high qualifications and legal or accounting experience) are able to fill the institutional void by bringing "reputational capital" to the board with them.

typically do not share the equity holders' enthusiasm at the prospect of a takeover. According to Harford (2003), target firm directors are seldom retained following the completion of the takeover. This phenomenon is even more pronounced among busy directors, primarily due to the reputation hypothesis, which asserts that busy directors have an incentive to avoid serving on boards of takeover targets because association with such firms damages their directorship reputations (e.g., Yermack, 2004; Fich & Shivdasani, 2007; and Wang et al., 2010). Further, Shivdasani (1993) finds that compared to when outside directors hold two additional directorships, as the number of additional directorships approaches zero, the likelihood of a takeover more than doubles. In addition, a hostile takeover on their watch signals that they are poor directors and inefficient monitors, which jeopardizes their current and/or future directorship appointments. Since busy directors have more than one lucrative appointment at stake if their reputation is damaged, they are more likely to pass anti-takeover provisions designed to protect against and/or delay takeovers (e.g. Loh, 1994; Fields & Keys, 2003; Harford, 2003; Wang et al., 2010). As a result, firms with busy directors are more likely to have stronger anti-takeover provisions in place, and thus are less likely to become a hostile takeover target.

Even though the general consensus concerning busy directors is that they hinder firm performance (and thus, the equity holders' returns) due to their distracted behavior,[56] Cremers et al. (2007) find that not all corporate governance characteristics involving the board of directors have the same effect on creditors as they have on the equity holders.

[56] According to surveys by the National Association of Corporate Directors (NACD), a single directorship required an average commitment of 228 hours in 2011.

For example, strong shareholder control is desired by the equity holders to maximize their wealth, while debt holders have a strong preference for weak shareholder control to minimize the asset substitution problem. In addition, Bradley and Chen (2011) find that firms that shield their directors from potential litigation, and thereby allow directors to pursue their own interests, enjoy a lower cost of debt.[57] Bradley and Chen attribute the relationship between directors' litigation protection and firm's cost of debt to lower shareholder control, since lower shareholder control reduces the risk of asset substitution which favors the lenders. Similarly, we expect that firms whose directors hold additional directorship appointments with other firms will also enjoy reduced levels of the cost of debt because busy directors are more likely to pursue their personal agendas, in addition to representing the equity holders, and thereby weaken shareholder control of the firm. Further, although the direct monitoring abilities of busy directors are shown to be impaired due to multiple-firm distractions,[58] they bring other valuable attributes to the board of directors, such as demanding higher quality external audits (Carcello, Hermanson, Neal, & Riley, 2002), provide multi-dimensional experience and expertise (Harris and Shimizu, 2004), and share knowledge of the corporate framework (Carpenter & Westphal, 2001; Perry & Peyer, 2005). Given that these qualities of busy directors appeal to lenders, the benefits of busy boards may outweigh the risk of distraction to firm performance.

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[57] Further, Bradley and Chen (2011) argue that the benefits of the reduced cost of debt often outweigh the costs of directorial shirking and suboptimal corporate policies, thus discouraging equity holders from enforcing too much shareholder control.

[58] See for example, Core et al. (1999), Shivdasani and Yermack (1999), Fich and Shivdasani (2006), and Jirapornet al. (2008).

2.3. Development of Testable Hypotheses

Based on the literature discussed in the sections above, we present the following hypotheses that we formally test in this study. First, we examine the linkage between board busyness and takeover vulnerability, as suggested by the directorship reputation hypothesis, to ensure that the takeover vulnerability index is a valid measure of takeover propensity. This step is important in establishing that busy directors take specific precautions (i.e., pass anti-takeover provisions) in order to avoid potential damage to their directorship reputation. Thus, we propose an inverse relationship between board busyness and takeover vulnerability defined in the sense of Gompers et al. (2003). Accordingly, our first hypothesis is formally stated as follows.

> *Hypothesis 1: Firms with busy boards will have a lower level of takeover vulnerability.*

Next, we proceed with testing the hypothesis to address the main question and purpose of our study. Specifically, we test the relationship between board busyness and the cost of debt. Based on the above discussed literature, we propose an inverse relationship between board busyness and cost of debt in a firm. Formally, we hypothesize the following:

> *Hypothesis 2: Firms with busy boards will have lower cost of debt than firms with non-busy boards.*

3. Data Description

3.1. Empirical Model

Based on our review of literature and our proposed hypothesis, the empirical model for the main question of our study is specified as follows:

$$\begin{aligned} Cost\ of\ Debt_{i,t} = {} & \beta_0 + \beta_1(Board\ Busyness_{i,t}) + \beta_2(Takeover\ Vulnerability_{i,t}) \\ & + \beta_3(FinancialControls_{i,t}) + \beta_4(Loan\ Controls_{i,t}) \\ & + \beta_5(Governance\ Controls_{i,t}) + \beta_6(Time\ Dummy_{i,t}) \\ & + \beta_7(Industry\ Dummy_{i,t}) + \varepsilon_{i,t} \end{aligned} \quad (1)$$

3.2. The Sample

To test our hypotheses, we compile data using the DealScan, Compustat, and RiskMetrics databases. We obtain the terms of bank loan agreements from DealScan, a database created and marketed by Loan Pricing Corporation (LPC). The database contains detailed loan information for U.S. and foreign commercial loans made to corporations and government entities during the period January 1999 to December 2006. According to LPC, approximately half of the loan data are from SEC filings (13Ds, 14Ds, 13Es, 10Ks, 10Qs, 8Ks, and registration statements). The other half are obtained from contacts within the credit history and from borrowers, lenders, and the credit industry at large.

Within the detailed loan agreement information from DealScan, we remove data for entries of financial institutions (SIC codes 6000-6999). Using the reduced DealScan sample, we match it to the Compustat database to obtain financial information for each

firm for the fiscal year preceding the loan agreement. We acquire information on the board of directors from the RiskMetrics database. Specifically, compared to loan contracting data, we lag all board composition variables by one year. Finally, we use the built-in anti-takeover governance provisions index in RiskMetrics, as developed by Gompers, Ishii, & Metrick (2003), to assess the takeover vulnerability for each firm at the time of the loan agreement. The resulting overall loan sample includes 2,964 loans from 1,057 unique borrowers.

3.3. Board Endogeneity

As with other research on board of directors' composition, this study is not exempt from the potential endogeneity problems (see, for example, Hermalin & Weisbach, 2001). Under the assumption of endogeneity, an argument can be made that instead of the hypothesized relationship of board busyness variables affecting the firm's cost of debt, the causality between the independent variables of interest and the dependent variable may be reversible. However, given that the board composition variables, including board busyness, are lagged by one year, it would indicate that the board structure was already established before the lender finalized the cost of debt terms. This simple observation, which is consistent with the argument provided by Bradley and Chen (2011) and Dittmar and Mahrt-Smith (2007), should alleviate much of the concern regarding endogeneity, especially the issue of reverse causality. In addition, we conduct the a two-stage least squares analysis in the robustness section, and conclude that the risk of significant endogeneity issues in our study is limited.

3.4. Description of Variables

Our dependent variable, the *Cost of Debt*, is the All-in-Spread-Drawn category within Dealscan that represents the borrowing cost per each dollar of the loan drawn. It is calculated as a basis point markup over the 6-month LIBOR, plus any recurring fees associated with the lending facility. Similar measures for cost of debt have been utilized in extant literature, both using the Dealscan private loan database (e.g., Chava et al., 2009; Demiroglu & James, 2010) and other public and private loan databases (e.g., Anderson et al., 2004; Bradley & Chen, 2011).

The independent variable of interest, *Board Busyness,* is studied using six proxy variables. These proxy variables are adapted/modified[59] from previous literature on busy boards (e.g., Chakravarty et al., 2011; Ferris et al., 2003; Fich & Shivdasani, 2006; Field et al., 2013). Using the RiskMetrics database, we define a busy director as a director who serves on the board of at least three major for-profit firms.[60] Based on this definition of a busy director, we calculate *# of Busy Directors* as the natural log of all busy directors who serve on the board of a given firm in our sample. *% of Busy Directors* is calculated as the ratio of busy directors to total number of directors on board. *Majority of Board Busy* is a binary variable that equals 1 if busy directors hold at least 50% of the board's seats, and 0 otherwise. As an alternative measure, which is more consistent with extant research on board busyness, we also define busy independent director as an independent

[59]In addition to studying the effects of board busyness concerning busy independent directors, we also want to determine if similar results emerge for models where board busyness variables are not limited only to independent directors serving on multiple boards, but instead include all busy directors regardless of their independence status.

[60] This definition is consistent with the U.S. Council of Institutional Investors' Corporate Governance Policies (2009). Note that, unlike the majority of extant research on busy boards, this definition of busy director does not require director independence.

director who sits on the board of at least three major for-profit firms. Therefore, the # *of Busy Independent Directors* variable is calculated as the natural log of total number busy independent directors. % *of Busy Independent Directors* is the percentage of busy independent directors to total number of directors on board. *Majority of Independent Directors Busy* is a binary variable that takes the value of 1 if busy independent directors hold at least 50% of the board's seats, and 0 otherwise.

The *Takeover Vulnerability* variable is based on the governance index developed by Gompers et al. (2003), which is composed of 24 anti-takeover governance provisions. Specifically, as suggested by Chava et al. (2009), we use the inverse of Gompers et al. governance index provided in RiskMetrics database to calculate our *Takeover Vulnerability* index. In accord to Gompers et al. (2003) and Chava et al. (2009), we also measure firm's vulnerability to a takeover using two binary variables: *Democracy* and *Dictatorship* portfolios. The *Democracy* portfolio consists of the top decile of the *Takeover Vulnerability* index (*Takeover Vulnerability* $\geq$ 19), and represents firms with the fewest anti-takeover governance provisions. Thus, firms in the *Democracy* portfolio are deemed most vulnerable to takeovers. The *Dictatorship* portfolio consists of firms on the bottom decile of the *Takeover Vulnerability* index (*Takeover Vulnerability* $\leq$ 10). Thus, firms in the *Dictatorship* portfolio are expected to be least vulnerable to takeovers.

Consistent with extant literature, we include the following financial control variables: *Market Capitalization, Book Leverage, Market-to-Book* ratio, and *Earnings-to-Assets* ratio.[61] We calculate *Market Capitalization* by multiplying the firm's total

[61] See, for example, Anderson et al. (2004), Bradley and Chen, (2011), Chavaet al. (2009), and Shivdasani (1993).

outstanding common stock shares, as reported in the quarterly SEC filing reports, by the price of that stock on the last day of the respective quarter. *Book Leverage* is the ratio of total debt held by the firm to total assets. *Market-to-Book* is the ratio of book assets minus book equity plus market equity to book assets. *Earnings-to-Assets* is the ratio of EBITDA to total assets.

To control for loan characteristics, we employ firms' credit ratings and debt maturity. Credit rating is determined using two proxy variables: *Debt Rating* and *Investment Grade* dummy. *Debt Rating* is calculated based on Standard & Poor's long-term domestic issuer credit rating of the borrowing firm. Specifically, firms with the highest possible S&P credit ranking of AAA are assigned a value of 7, AA convert to 6, A to 5, BBB to 4, BB to 3, B to 2, and CCC to 1. *Investment Grade* is a dummy variable that takes a value of 1 if the firm received S&P credit rating of BBB or higher, and 0 if the firm was rated below BBB. *Maturity* is natural log of the number months that represent the duration of the loan.

To control for board of directors' composition, we include the following variables in our model: board independence, board size, directors' voting power, director's tenure on board, and directors' age. By reviewing directors' affiliation category in the RiskMetrics database, we classify directors who are coded as "independent" by RiskMetrics as independent, and all others as insiders. Based on these specifications, we measure board independence using two proxy variables: *% of Independent Directors* and *Majority of Board Independent.*[62] *% of Independent Directors* is the ratio of independent directors to total number of directors on the board. *Majority of Board Independent* is a

[62] Similar proxies were used by Anderson et al. (2004) and Klein (2002) to measure board independence.

binary variable that equals 1 if independent directors hold at least 50% of the board's seats, and 0 otherwise.

Our measure of the number of directors on board consists of three proxies adapted from prior literature. The first proxy, which is commonly used in the literature,[63] is the natural log of the total number of directors serving on the board, denoted as *Board Size*. The second and third measures of the number of directors on board have been developed by Anderson et al. (2004). Specifically, these proxies use binary variables that classify boards as either *Large Board* (top quartile of board size) or *Small Board* (bottom quartile of board size), respectively.[64] To control for the equity in the firm held by directors, we adapt the method used by Bhagat, Carey, and Elson (1999) and Henry (2011) as a guide to calculate *Voting Power*, defined as the combined percentage of outstanding stock shares held by all directors serving on the board. Board *Tenure* is calculated as the sum of the number of years that the directors served on the board divided by the total number of directors. Directors' *Age* is the sum of all directors' ages divided by the total number of directors.

3.5. Descriptive Statistics

Table 1 presents the overall summary statistics for board composition, loan, and borrower characteristics. We find that, on average, the board of directors is composed of slightly fewer than 10 directors. An average director in our sample holds about 2

[63]For example, Vafeas (2000), Klein (2002), Hermalin and Weisbach (2003), Boone et al. (2007), and Coles et al. (2008).

[64] Based on our data, the top quartile of board size consists of at least 11 directors; therefore, *Large Board* equals 1 if the board is comprised of 11 or more directors, and 0 otherwise. Similarly, the bottom quartile of board size consists of at most 8 directors; therefore, *Small Board* equals 1 if the board is comprised of 8 or fewer directors, and 0 otherwise.

directorship seats, which is consistent with other studies (e.g., Ferris et al., 2003; Jiraporn et al., 2008). Busy directors make up about 26% of a board and about 16% of all boards in our sample are classified as busy. Similar to Ashbaugh-Skaife et al. (2006) and Bhojraj and Sengupta (2003), we find that independent directors, on average, make up around 69% of the total number of directors and about 88% of firms in our sample have independent boards of directors. A typical director is about 60 years old and has served on the board of a given firm for almost 10 years. The mean takeover vulnerability score is slightly over 14, and consistent with Chava et al. (2009) and Gompers et al. (2003), about 5% of firms in our sample fall into the Democracy portfolio and about 6% fall into the Dictatorship portfolio.

The average Cost of Debt variable in our sample is 106 basis points, which is similar to Anderson et al. (2004), Bradley and Chen (2011), and Demiroglu and James (2010). We find that only about 27% of firms are constricted by at least one financial covenant; however, financial covenants are not common, as indicated by a median score of 0. Further, we identify that the average firm is slightly over the Investment Grade level with a debt rating score of 4.03, the loan maturity is almost 41 months with about 10 lenders per loan. Over 41% of loans in our sample are secured with collateral, and, on average, the loan represents about 31% of the firm's total assets.

The borrower characteristics in our sample are consistent with prior literature, such as Anderson et al. (2004), Chava et al. (2009), and Jiraporn et al. (2008). Specifically, the average market capitalization value per firm is about $11,153 million, total assets value about $10,984 million, book leverage is about 59%, market-to-book ratio is 1.89, and earnings-to-assets ratio is about 3.5%.

4. Results

4.1. Board Busyness and Takeover Vulnerability

In our quest to test Hypothesis 1, to determine if firms with busy boards experience lower levels of takeover vulnerability, we begin by examining correlation statistics between the individual components of takeover vulnerability index and the six proxy measures of board busyness. As shown in Table 2, board busyness is positively and statistically significant for every category[65] within the takeover vulnerability index.[66] Consistent with Bradley and Chen (2011), boards with busy directors appear to have an especially strong and positive relationship within the Delay (blank check, special meeting, and written consent provisions) and Protection (compensation plans, contracts, golden parachutes, directors indemnification, and directors liability provisions) categories. In addition, boards with busy directors exhibit a strong positive relationship with the bylaws and charter and secret ballot provisions within the Voting category, as well as anti-greenmail, fair price, pension parachutes, and silver parachutes provisions within the Other category. Out of 24 provisions in the takeover vulnerability index, only five provisions have a statistically significant negative relationship with board busyness: cumulative voting, unequal voting, directors' duties, poison pill, and control-share acquisition law. However, correlation values for these provisions are relatively low,

[65] The takeover vulnerability index categories (Delay, Protection, Voting, Other, and State) were adapted from Gompers et al. (2003) anti-takeover Governance Index.
[66] Detailed description of each of the 24 provisions can be found in Appendix 1 (pp. 145-150) of Gompers et al. (2003) study on development of their anti-takeover Governance Index.

ranging from -0.01 to -0.07. Further, these provisions are mostly designed for strengthening shareholders' rights, rather than preventing a potential takeover of a firm.[67]

We also review correlations between board busyness and the democracy/dictatorship portfolio classifications of a firm. As expected, we find that the relationship between board busyness and firms that fall into the democracy classification portfolio is negative and highly significant, while the relationship between firms that fall into the dictatorship classification is positive and statistically significant. Therefore, based on the results presented in Table 2, a pattern of strong positive associations between board busyness and the presence of takeover vulnerability components is observed.

To test the relationship between board busyness and firm's takeover vulnerability in a multivariate setting, we run a series of Poisson maximum likelihood estimations in Table 3. Poisson regression is an appropriate statistical method to estimate our dependent variable, *Takeover Vulnerability Index*, because it counts the number of anti-takeover provision occurrences in each firm within our sample. In our analyses, we use robust standard errors adjusted for clustering at the firm level to minimize the potential effects of heteroskedasticity. Further, we include year and industry dummy variables to control for possible time and industry effects.

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[67]For example, the cumulative voting provision helps minority shareholders to elect directors by allowing them to concentrate their votes; unequal voting rights limit the voting rights of some shareholders (e.g., those who have exceeded a predetermined threshold of ownership) and expand the voting rights of others (e.g., those who have held the stock for a longer period of time); directors' duties provision allows directors to consider stakeholders other than shareholders when considering a merger; poison pills typically give the shareholders of the target's stock other than the bidder the right to purchase stock in the target or the bidder's firm at a deep discount, thus making the target unattractive for a takeover; and control-share acquisition laws require a majority of disinterested shareholders to vote on whether a newly qualifying large shareholder has voting rights (Gompers et al. (2003)).

Results of Poisson regression presented in Table 3 confirm our expectations stated in Hypothesis 1, as well as the correlation statistics in Table 2. Specifically, we find that all six proxy measures of board busyness have a negative and statistically significant effect on the takeover vulnerability index, even in the presence of other board composition, loan, and borrower characteristics as control variables. Therefore, we conclude that firms with busy directors indeed are more likely to experience lower levels of takeover vulnerability than those without busy directors, thus supporting Hypothesis 1. Further, since our results are consistent with Shivdasani (1993), even though our dependent variable is based on *ex-ante* data, as compared to *ex post* data, we conclude that the takeover vulnerability index is a valid proxy measure to estimate the likelihood of a firm becoming a takeover target.

4.2. Board Busyness and Cost of Debt

To test the effect of board busyness on firms' cost of debt, we begin with a trend analysis by partitioning our board busyness measures into equal increments and examining how the cost of debt changes with each increasing increment category. As presented in Table 4, Panel A, we break the *% of Busy Directors* and *% of Busy Independent Directors* into 10% segment categories: below 10%, 10-19.99%, 20-29.99%, etcetera. For each segment we document the number of firms, the percentage of total firms that fall into that category, and the average cost of debt for those firms. We find that, in general, as the percentage of busy directors increases, the average cost of debt decreases. Further, when using the *% of Busy Directors* proxy measure for board busyness, we discover that the cost of debt significantly decreases when the board is at

least 40% busy, while when using the *% of Busy Independent Directors* measure, the cost of debt falls below the average 106 basis points level when the board is comprised of at least 30% of busy independent directors. Therefore, it is important to note that the traditional definition of busy board as having at least 50% of independent directors hold three or more directorship positions does not appear to be a prerequisite for reaping the benefits of a lower cost of debt (e.g., Ferris et al., 2003; Fich & Shivdasani, 2006; Field et al., 2013).

In Panel B of Table 4, we show how the cost of debt is affected when a firm adds an additional busy director to the board. Specifically, we create a separate category based on how many busy directors are present on each board. Using both, the *# of Busy Directors* and *# of Busy Independent Directors* as proxy measures of board busyness, we find that with every incremental addition of a busy director to the board, the cost of debt steadily and consistently decreases. Further, we find that having at least four busy directors, or at least three busy independent directors on board significantly decreases the firm's cost of debt.

To test Hypothesis 2 in a multivariate setting, we employ a series of OLS regressions based on the model in Equation 1 introduced in Section 3.1. We include year and industry dummy variables to control for possible time and industry effects.

Based on the OLS results presented in Table 5, we find that greater board busyness is associated with a lower cost of debt, even after controlling for other board composition, loan, and borrower characteristics. This finding is consistent with the concept that lenders recognize firms with busy directors as safer investments, and are thus willing to lend funds at a lower rate (e.g., Cremers et al., 2007; Klock et al., 2005;

Shivdasani, 1993). Economically, the *# of Busy Directors* coefficient indicates that for every additional busy director on the board, the cost of debt is reduced by about 4.42 basis points, which translates into 17.68 points lower for firms with four busy directors as compared to those with no busy directors. In addition, the cost of debt for firms whose board is comprised of 40% busy directors is 10.31 basis points lower compared to those comprised of the average 25% busy directors. We find similar economical effects for board busyness variables restricted to busy directors who are also independent. Based on these results, we conclude that board busyness has a negative and statistically significant effect on firms' cost of debt, thus supporting Hypothesis 2.

5. Sensitivity and Robustness Checks

Our analyses assume that the specifications and proxies used effectively measure the appropriate attributes. As such, to ensure that our findings are not incidental, we perform additional procedures to test for sensitivities and robustness of our results. Similar to other research works, such as Anderson et al. (2004), we review for serial correlation, test for non-linearities, and truncate outliers and influential observations. We find that our results are robust to these various alternative specifications.

In addition, we retest the Poisson likelihood estimation models presented in Table 3 using ordered-Probit and ordered-Logit estimates. We perform these tests in order to compare our Poisson results to other acceptable statistical methods (for discrete and ordered dependent variables, such as the takeover vulnerability index), and to determine if any major deviations exist that may indicate problems with our models. The estimates

using Probit and Logit regressions yield results that are comparable to those presented in Table 3.

Finally, to address any potential endogeneity issues in our study, we use the exogenous instrumental variables approach to test board structure variables in a two-stage least squares model. Since Hermalin and Weisbach (2003) warn that board of directors variables are likely to be endogenous, we treat all of our significant board characteristics variables (board busyness, board independence, and board size) as suspects. The approach requires an instrument for each board characteristic variable that is related to the suspected endogenous variable, but unrelated to the error terms of the dependent variable (Wooldridge, 2012). However, identifying instruments that meet those criteria for each board quality variable is challenging. Following a method used by Fields et al. (2012), we develop a new variable – board quality index – by assigning point values to each of our board quality variable. Specifically, a value of 1 is assigned to the variable if it is above its cross-sectional median, and 0 otherwise. The resulting board quality index has a range from 0 to 3.

Consistent with Fields et al. (2012), we use the distance between the corporate headquarters of the borrowing firm and the nearest medium or larger airport as an instrument for the board quality index variable. According to Alam, Chen, Ciccotello, and Ryan (2014) and Knyazeva, Knyazeva, and Masulis (2013), the distance between headquarters and the nearest airport hub is a measure of the cost to a potential director in terms of time and effort required to travel to board meetings. Thus, the distance variable is expected to have an inverse relationship with the borrower's board quality index. In the first stage of our two-stage least squares model, the distance variable is statistically

significant at below the 1% level, with a coefficient of -0.03010 and standard error 0.007761. Therefore, we proceed to the second stage of the model, which we report in Table 6. The results indicate that the board quality index coefficient has a negative and statistically significant effect on loan spread. Therefore, we conclude that our analyses in this study are not significantly affected by endogeneity.

6. Summary and Conclusion

The main purpose of this study is to investigate the effect that board busyness has on a firm's cost of debt. Extant literature presents mixed results on the possible avenues of how lenders may view firms with busy directors on the board. Specifically, studies such as Core et al. (1999) and Fich and Shivdasani (2006) suggest that busy directors are overextended and make poor monitors of the firm's management, thus leading to worse firm performance than firms whose boards are not busy. Conversely, other studies such as Bradley and Chen (2011), Chakravarty et al. (2011), and Field et al. (2013) argue that under certain conditions (e.g., the presence of institutional voids, IPO firms, and properly aligned self-serving motives), firms with busy directors actually receive more benefits than firms without busy directors. Therefore, using takeover vulnerability[68] as the setting, we examine how board busyness affects firms' cost of debt.

First, we test the relationship between board busyness and takeover vulnerability to ensure that the relationship holds when using an *ex-ante* proxy measure for the likelihood of a takeover. Based on our analyses, we find that board busyness has an

[68]We choose takeover vulnerability because in the event of a takeover, both busy directors and lenders are likely to be negatively impacts. Specifically, busy directors are likely to experience a dampened directorship reputation that can lead to loss of profitable directorships, and lenders are likely to suffer from increased credit risk.

inverse relationship with takeover vulnerability. Therefore, the greater the board busyness, the lower the firm's takeover vulnerability index score. This finding is consistent with the concept that although busy directors may not be the most diligent monitors of the firm's management, they are protective of their self-interests, such as shielding their directorship reputation and protecting existing and future directorship appointments.

After establishing the negative relationship between board busyness and takeover vulnerability index, we test the impact of board busyness on firms' cost of debt, after controlling for takeover vulnerability and other factors. We find that, as expected, board busyness has a negative relationship with cost of debt. Specifically, firms with busy directors exhibit both statistically and economically lower cost of debt. This finding is also consistent with prior literature that states the interests of lenders and shareholders are not always congruent (Bradley & Chen, 2011; Chava et al., 2009). Therefore, even though shareholders typically benefit from takeovers, since both lenders and busy directors share the common objective of avoiding takeovers, lenders tend to offer lending agreements with lower cost of debt provisions to firms with busy directors.

The results of this study demonstrate that although board busyness received a great deal of unfavorable publicity in recent literature[69] due to lower firm performance indicators, busy directors are beneficial to their firms. Therefore, future research should further expand on the additional benefits that busy directors bring to their firms. By taking a modest step toward a more comprehensive understanding of board busyness, it is

[69] See, for example, Core, Holthausen, and Larker (1999), Fich and Shivdasani (2006), Jiraporn, Kim, and Davidson (2008) and Shivdasani and Yermack (1999).

our hope that business practitioners, regulators, and academics gain a clearer picture on how to balance the positive and negative attributes of busy directors to achieve harmony among all stakeholders in the firm.

Table 1

Descriptive Statistics for Variable Measures

Variables	Mean	Median	SD	Min	Max
Board Characteristics:					
Board size	9.81	10.00	2.51	3.00	20.00
# of directorships per director	1.96	1.88	0.65	1.00	5.79
# of busy directors	2.68	2.00	2.36	0.00	12.00
% of busy directors	25.89%	22.22%	20.90%	0.00%	100.00%
% of busy boards	15.82%	---	---	---	---
# of busy independent directors	2.15	2.00	2.00	0.00	11.00
% of busy independent directors	29.03%	25.00%	23.98%	0.00%	100.00%
% of busy independent boards	15.31%	---	---	---	---
# of independent directors	6.80	7.00	2.50	0.00	16.00
% of independent directors	68.72%	71.43%	17.18%	0.00%	100.00%
% of independent boards	88.22%	---	---	---	---
Directors' service tenure	9.72	9.25	3.69	0.00	33.00
Age of directors	59.67	59.91	3.64	39.17	74.43
Takeover vulnerability	14.37	14.00	2.52	7.00	21.00
Democracy portfolio	4.99%	---	---	---	---
Dictatorship portfolio	5.97%	---	---	---	---
Loan Characteristics:					
Cost of Debt (basis points)	106.01	75.00	91.97	8.50	1,000.00
Number of financial covenants	0.27	0.00	0.61	0.00	5.00
Credit rating score	4.03	4.00	1.05	1.00	7.00
Maturity (months)	40.64	42.00	22.59	1.00	174.00
Number of lenders	10.76	9.00	8.45	1.00	118.00
Percentage of secured loans	41.39%	---	---	---	---
Loan amount / Assets	0.31	0.10	7.45	0.00	424.80
Borrower Characteristics:					
Market capitalization (in millions)	$11,153	$2,622	$31,817	$0.00	$481,415
Total Assets (in millions)	$11,049	$2,861	$36,246	$1.02	$704,620
Book leverage	0.59	0.59	0.18	0.05	2.25
Market-to-Book ratio	1.89	1.49	1.56	0.40	44.41
EBITDA/Total Assets	0.035	0.034	0.029	-0.576	0.256

Table 2

Correlation Statistics between Components of the Takeover Vulnerability Index and Board Busyness

Takeover Vulnerability Index Provisions	% of Firms	Measures of Board Busyness: # of Busy Directors	% of Busy Directors	Majority of Board Busy	# of Busy Independent Directors	% of Busy Independent Directors	Majority of Independent Directors Busy
Delay		0.15***	0.16***	0.15***	0.14***	0.13***	0.15***
Blank check	91.13%	0.10***	0.11***	0.10***	0.09***	0.11***	0.10***
Classified board	60.55%	0.01	0.02	0.03	0.01	0.01	0.02
Special meeting	50.25%	0.17***	0.17***	0.15***	0.16***	0.13***	0.14***
Written consent	43.31%	0.11***	0.12***	0.12***	0.12***	0.10***	0.12***
Protection		0.21***	0.19***	0.12***	0.22***	0.15***	0.13***
Compensation plans	80.91%	0.11***	0.12***	0.08***	0.11***	0.08***	0.09***
Contracts	10.78%	0.06***	0.04**	-0.01	0.05***	0.04**	-0.01
Golden parachutes	73.82%	0.02	0.03*	0.04**	0.04**	-0.02	0.04***
Indemnification	26.68%	0.12***	0.10***	0.06***	0.12***	0.09***	0.07***
Liability	47.76%	0.23***	0.18***	0.11***	0.23***	0.17***	0.12***
Severance	5.58%	-0.01	-0.02	-0.02	-0.02	-0.01	-0.02
Voting		0.18***	0.15***	0.10***	0.18***	0.13***	0.10***
Bylaws and charter	22.05%	0.04**	0.05***	0.02	0.05***	0.05***	0.01
Cumulative voting	11.31%	-0.01	-0.01	-0.03**	-0.01	-0.03*	-0.03*
Secret ballot	18.20%	0.29***	0.26***	0.23***	0.30***	0.24***	0.23***
Supermajority	17.84%	0.02	0.01	-0.01	0.01	-0.01	-0.02
Unequal voting	1.07%	-0.02	-0.03*	-0.04**	-0.02	-0.02	-0.04**
Other		0.11***	0.11***	0.09***	0.13***	0.07***	0.10***
Antigreenmail	5.37%	0.09***	0.09***	0.07***	0.10***	0.08***	0.07***
Directors' duties	8.28%	-0.02	-0.04**	-0.02	-0.01	-0.02	-0.02
Fair price	28.38%	0.19***	0.17***	0.13***	0.19***	0.15***	0.13***
Pension parachutes	1.37%	0.11***	0.10***	0.10***	0.11***	0.10***	0.10***
Poison pill	57.52%	-0.03*	-0.01	0.01	-0.02	-0.05***	0.01
Silver parachutes	2.40%	0.06***	0.05***	0.04**	0.09***	0.05***	0.04***

Table 2, continued

Takeover Vulnerability Index Provisions	% of Firms	Measures of Board Busyness: # of Busy Directors	% of Busy Directors	Majority of Board Busy	# of Busy Independent Directors	% of Busy Independent Directors	Majority of Independent Directors Busy
State		0.12***	0.09***	0.04**	0.14***	0.09***	0.05***
Business combination law	91.75%	0.01	0.01	-0.01	0.01	0.01	-0.01
Cash-out law	2.91%	0.01	0.02	0.03*	0.02	0.02	0.03*
Control-share acquisition law	30.37%	-0.01	-0.03*	-0.07***	-0.01	-0.03*	-0.06***
Portfolio classification							
Democracy		-0.15***	-0.14***	-0.10***	-0.18***	-0.12***	-0.11***
Dictatorship		0.14***	0.14***	0.07***	0.15***	0.11***	0.08***

*, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table 3

Takeover Vulnerability and Board Busyness

Parameter		Dependent variable = takeover vulnerability index					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Intercept		14.8791***	15.3728***	14.9979***	14.7781***	15.6101***	15.0214***
		(0.9070)	(0.8903)	(0.9076)	(0.9122)	(0.8877)	(0.9082)
# of Busy Directors	?	-0.1189***					
		(0.0235)					
% of Busy Directors	?		-1.5198***				
			(0.2464)				
Majority of Board Busy	?			-0.5450***			
				(0.1249)			
# of Busy Independent Directors	?				-0.1374***		
					(0.0282)		
% of Busy Independent Directors	?					-1.1692***	
						(0.2118)	
Majority of Independent Directors Busy	?						-0.5272***
							(0.1267)
% of Independent Directors	(-)	-2.3979***		-2.4569***	-2.1281***		-2.4308***
		(0.3158)		(0.3154)	(0.3288)		(0.3165)
Majority of Board Independent	(-)		-0.5726***			-0.6070***	
			(0.1650)			(0.1648)	
Board Size	(-)		-0.0936***			-0.0905***	
			(0.0224)			(0.0224)	
Small Board	(+)	0.4480***		0.5316***	0.4580***		0.5295***
		(0.1325)		(0.1320)	(0.1324)		(0.1320)
Large Board	(-)	0.0208		-0.0922	-0.0137		-0.0893
		(0.1095)		(0.1085)	(0.1094)		(0.1086)
Voting Power	(+)	0.0307***	0.0353***	0.0309***	0.0313***	0.0363***	0.0309***
		(0.0030)	(0.0030)	(0.0030)	(0.0030)	(0.0030)	(0.0030)
Tenure on Board	(-)	-0.1228***	-0.1054***	-0.1198***	-0.1224***	-0.1026***	-0.1190***
		(0.0153)	(0.0151)	(0.0153)	(0.0153)	(0.0151)	(0.0153)

Table 3, continued

Parameter		Dependent variable = takeover vulnerability index					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Age of Directors	(+)	0.0062	-0.0056	0.0065	0.0055	-0.0084	-0.0161
		(0.0151)	(0.0152)	(0.0151)	(0.0151)	(0.0152)	(0.0152)
LN(Market Capitalization)	(-)	-0.4089***	-0.4286***	-0.3774***	-0.4022***	-0.4139***	-0.3752***
		(0.0453)	(0.0461)	(0.0441)	(0.0451)	(0.0459)	(0.0440)
Debt Rating	(-)	-0.2594***	-0.2975***	-0.2690***	-0.2624***	-0.3044***	-0.2689***
		(0.0557)	(0.0559)	(0.0556)	(0.0557)	(0.0559)	(0.0557)
Leverage	(+)	0.6561**	0.7331**	0.7357**	0.6905**	0.7893**	0.7567**
		(0.3065)	(0.3101)	(0.3055)	(0.3059)	(0.3099)	(0.3052)
Market-to-Book ratio	(-)	-0.1696***	-0.1571***	-0.1721***	-0.1649***	-0.1482***	-0.1729***
		(0.0495)	(0.0498)	(0.0495)	(0.0495)	(0.0499)	(0.0495)
Year Dummies		Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummies		Yes	Yes	Yes	Yes	Yes	Yes
N		2,493	2,493	2,493	2,493	2,493	2,493

*, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table 4

Cost of Debt by Board Busyness Interval Categories

Panel A:

% of Busy Directors

	≤10%	10-19%	20-29%	30-39%	40-49%	50-59%	60-69%	70-79%	80-89%	90-99%	100%
N	728	621	571	430	300	257	107	76	27	11	0
%	23.27%	19.85%	18.25%	13.75%	9.59%	8.22%	3.42%	2.43%	0.86%	0.35%	0.00%
Cost of Debt	132.4	120.01	102.21	102.14	81.59	80.02	63.97	60.63	61.78	22.5	

% of Busy Independent Directors

	≤10%	10-19%	20-29%	30-39%	40-49%	50-59%	60-69%	70-79%	80-89%	90-99%	100%
N	771	382	587	375	271	372	179	105	62	5	19
%	24.65%	12.21%	18.77%	11.99%	8.66%	11.89%	5.72%	3.36%	1.98%	0.16%	0.61%
Cost of Debt	132.94	115.24	105.58	98.28	94.64	91.1	83.8	71.73	62.49	28	38.82

Panel B:

# of Busy Directors

	0	1	2	3	4	5	6	7	8	9	10	11	12
N	607	583	553	421	323	250	157	103	59	39	20	6	7
%	19.41%	18.64%	17.68%	13.46%	10.33%	7.99%	5.02%	3.29%	1.89%	1.25%	0.64%	0.19%	0.22%
Cost of Debt	136.99	126.04	110.44	104.2	90.74	75.22	59.35	59.03	46.29	48.7	35.85	32.5	15.67

# of Busy Independent Directors

	0	1	2	3	4	5	6	7	8	9	10	11
N	763	671	593	378	294	201	107	81	24	12	2	2
%	24.39%	21.45%	18.96%	12.08%	9.40%	6.43%	3.42%	2.59%	0.77%	0.38%	0.06%	0.06%
Cost of Debt	133.66	123.9	104.19	94.89	79.13	63.05	61.42	56.61	45.79	40.08	15	15

Table 5

Cost of Debt and Board Busyness

Parameter		Dependent variable = Cost of Debt					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Intercept		229.7644***	221.8975***	239.2881***	201.4461***	250.6858***	227.5470***
		(9.1791)	(11.2735)	(9.4861)	(10.6010)	(7.7629)	(8.4894)
# of Busy Directors	?	-1.4867***					
		(0.6116)					
% of Busy Directors	?		-0.6872***				
			(0.2661)				
Majority of Board Busy	?			-15.4239**			
				(6.9636)			
# of Busy Independent Directors	?				-1.5416**		
					(0.7191)		
% of Busy Independent Directors	?					-0.3911***	
						(0.1535)	
Majority of Independent Directors Busy	?						-16.5292**
							(8.1658)
Democracy	(+)	5.6261		6.6094		4.1701	4.7471
		(5.5570)		(5.5667)		(5.5414)	(5.5365)
Dictatorship	(-)	-7.5599*		-7.6850*		-8.0229**	-7.1380**
		(3.7559)		(4.2394)		(3.3105)	(3.2739)
Takeover Vulnerability Index	(+)		1.8446***		1.7862***		
			(0.4801)		(0.4795)		
Majority of Board Independent	(-)	-4.3223	-1.7545				
		(3.7559)	(3.7604)				
% of Independent Directors	(-)			-20.1555***			
				(7.0088)			
Small Board	(+)	11.3017***		11.8609***	10.0546***		12.1634***
		(3.1161)		(3.8757)	(3.1165)		(3.0897)
Large Board	(-)	-2.0504		-3.4751	-2.4421		-3.5983
		(2.9037)		(2.8699)	(2.8868)		(2.8715)

Table 5, continued

Parameter		Dependent variable = Cost of Debt					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Board Size	(-)		-1.7027***			-1.9523***	
			(0.5604)			(0.5598)	
LN(Market Capitalization)	(-)	-12.5199***	-12.9309***	-12.9186***	-13.1039***	-12.7052***	-12.9912***
		(1.0034)	(1.0142)	(0.9548)	(0.9948)	(1.0017)	(0.9545)
Book Leverage	(+)	77.5166***	78.6632***	77.9215***	79.6386***	75.2093***	76.4052***
		(6.8985)	(6.9046)	(6.8817)	(6.8922)	(6.9003)	(6.8694)
Debt Maturity	(-)	-0.1696***	-0.1652***	-0.1793***	-0.1686***	-0.1679***	-0.1707***
		(0.0522)	(0.0521)	(0.0522)	(0.0520)	(0.0523)	(0.0522)
Earnings to Assets Ratio	(-)	-250.2743***	-236.0454***	-250.7643***	-236.3405***	-245.1509***	-244.8215***
		(42.8067)	(42.9008)	(42.7555)	(42.7777)	(42.9264)	(42.7599)
Dummy: Investment Grade	(-)	-97.2543***	-96.6756***	-96.7208***	-96.2809***	-98.2116***	-97.5232***
		(2.7449)	(2.7466)	(2.7515)	(2.7464)	(2.7347)	(2.7396)
Year Dummies		Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummies		Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2		51.05%	51.14%	51.11%	51.23	50.85	50.99
N		2,964	2,964	2,964	2,964	2,964	2,964

*, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table 6

Endogeneity Robustness Check

Parameter	Cost of Debt
Intercept	6.4055***
	(0.1721)
Board Quality Index	-0.8609***
	(0.2676)
Takeover Vulnerability Index	-0.0417**
	(0.0163)
LN(Market Capitalization)	-0.2111***
	(0.0069)
Book Leverage	1.1595***
	(0.2459)
Debt Maturity	-0.0021***
	(0.0004)
Earnings to Assets Ratio	-4.4257***
	(1.0651)
Dummy: Investment Grade	-0.7064***
	(0.0552)
Year Dummies	Yes
Industry Dummies	Yes
Adjusted R^2	62.44%
N	2,964

*, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

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VITA

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PUBLICATIONS

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Journal Articles

Rutherford, B. N., Boles, J. S., Hamwi, G. A., & Rutherford, L. G. (2010). Interrelationships of work-family conflict, role stress, emotional exhaustion, and perceived organizational support on the seven facets of job satisfaction. *The Journal of Selling and Major Account Management, 10*(1), 8-20.

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